



Abstracts from the 18th World Congress of the International Federation for the Surgery of Obesity & Metabolic Disorders (IFSO), Istanbul, Turkey 28-31 August 2013

SCIENTIFIC SESSIONS

O.001 Sleeve Gastrectomy in Type 2 Diabetic Obese Patients

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Introduction: We report our results in terms of type 2 diabetes (T2DM) control in obese patients after laparoscopic sleeve gastrectomy (LSG), analyzing the of excess weight loss percentage (EWL%), metabolic performance after surgery, and morbimortality.

Methods: A prospective series of obese, well-controlled T2DM patients underwent LSG consecutively between April 2006 and December 2012.

Results: 70 patients, 42 male and 28 female, mean age 50 years (24–70), were operated upon and underwent follow-up for a mean of 22,1 months (3–46). Mean preoperative BMI versus follow-up BMI were 36.22(30.2-51) and 27.92 (21.3-35), respectively, and the mean EWL% was 77.53%. Mean pre-operative fasting glucose levels and HbA1C decreased from 147,28mg% (84–250) to 94,35mg% (70–120) and from 7.0 % (5.2-11.6) to 5.78% (5.3-6.9), respectively. At follow-up, 89% of patients did not require further oral treatment for diabetes, while 11% witnessed a significant decrease in dosage of medication and/or were being progressively tapered off of medication. There were no conversions. Two patients (4%) presented postoperative morbidity: one presented a haemoperitoneum and another presented a peri-gastric haematoma – both were managed non-operatively. There was no mortality in this series.

Discussion: LSG is a safe and an effective treatment for mild and well controlled T2DM patients, achieving very good metabolic control. Further follow-up is necessary to evaluate long term results and may provide valuable information in optimizing patient selection for this procedure.

O.002 Gastric Bypass as a Treatment for Type 2 Diabetes Mellitus and Associated Co-morbidities: The DiaSurg 2 Trial

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Introduction: Early remission of type 2 diabetes mellitus (T2DM) was found after bariatric surgery with laparoscopic Roux-Y gastric bypass (RYGB) for morbidly obese patients independently from weight-loss. Consequently, the indication of RYGB is shifting towards T2DM in mildly obese patients. In the DiaSurg 1 trial, 20 patients with T2DM and BMI 25–35 Kg/m² received RYGB in a cohort study and showed significantly improved HbA1c, BMI as well as neuropathy scores 6 months postoperatively. Randomized controlled trials

are now needed to provide clear evidence for the role of surgery for the treatment of T2DM.

Methods: The DiaSurg 2 trial is a multicenter, randomized controlled trial with a two-group parallel design and a composite time-to-event endpoint for morbidity and mortality from diabetes-associated diseases. 400 patients with BMI 26–35 Kg/m² aged 18–65 will be randomized to receive either RYGB or optimal medical care according to national treatment guidelines for T2DM with a follow-up of 8 years.

Conclusion: The DiaSurg 2 trial will provide long-term data on the associated morbidity and mortality in patients with insulin-dependent T2DM comparing RYGB with standard medical care.

O.003 Laparoscopic Sleeve Gastrectomy Versus Gastric Bypass for the Treatment of Type 2 Diabetes Mellitus: The Role of Interleukin-1b Dependent Mechanisms

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Background: To compare endocrine, metabolic, and inflammatory changes induced by laparoscopic sleeve gastrectomy (LSG) and laparoscopic gastric bypass (LGB) in type 2 diabetes mellitus (T2DM) patients with BMI < 35 kg/m², and to investigate the mechanisms of success after metabolic surgery.

Methods: Sixteen LSG and 16 LGB patients were followed up before and at 1 year after surgery. The 75-g oral glucose tolerance test (OGTT) was performed before and after surgery. Glucose homeostasis, serum interleukin-1b, plasma gut hormones and adipokines, and the United Kingdom Prospective Diabetes Study (UKPDS) ten-year cardiovascular risks were evaluated.

Results: The diabetes remission rate (HbA1c < 6.5%) was significantly higher in LGB than LSG (100% vs. 50%). Insulinogenic index was enhanced and serum interleukin-1b was reduced in patients with their T2DM remission after surgery. Logistic regression analysis confirmed that insulinogenic index and interleukin-1b, not insulin resistance, were the factors determining the success of diabetes remission after metabolic surgeries. LGB and LSG significantly reduced the ten-year risk of coronary heart disease and fatal coronary heart disease in T2DM patients after surgery, while LGB had the additional benefit of reduced stroke risk.

Conclusion: Human diabetes remission after metabolic surgery is through insulin secretion and interleukin-1b dependent mechanisms. LGB is superior to LSG in cardiocerebral risk reduction in Asian non-morbidly obese T2DM patients.

O.004 Diabetes Remission Rates After Bariatric Surgery

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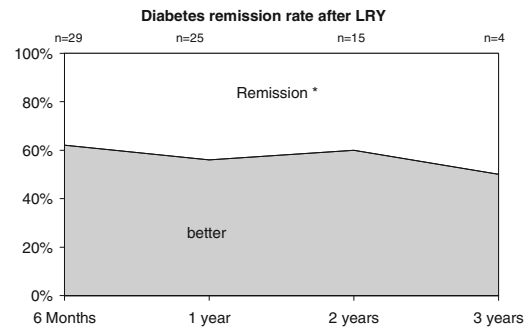
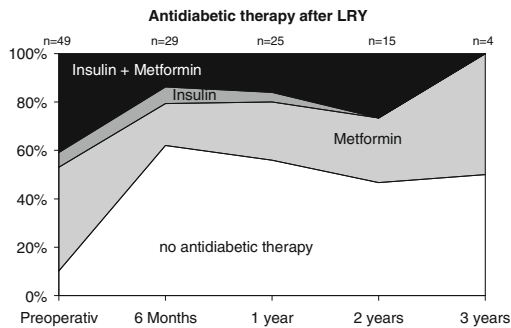
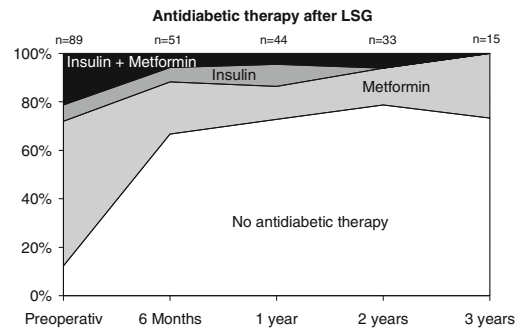
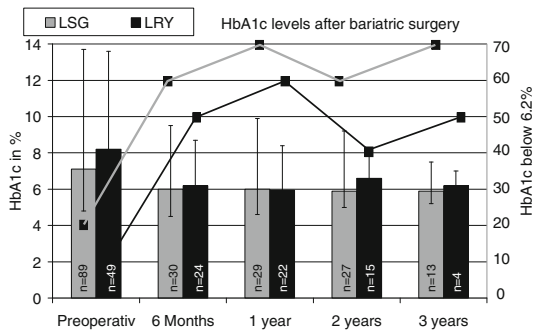
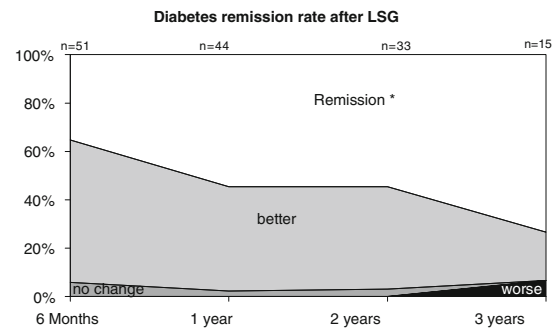
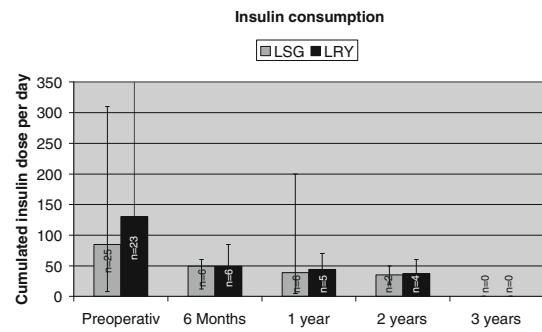
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Introduction: Influences of bariatric surgery on diabetic remission rates are still discussed controversial.

Method: We analyzed our institutional bariatric surgery database for patients with diabetes (DM). Weight, BMI, medication, insulin requirement and Hb1c level were evaluated in patients after sleeve gastrectomy (LSG) and laparoscopy roux-y gastric bypass (LRY). Maximum follow-up is 3 years. Remission of DM was defined as HbA1c level below 6.2% and no antidiabetic medication.

Results: Preoperatively HbA1c levels in LSG patients (n=89) were significantly lower than the LRY group (n=49) (7.1% vs. 8.2%). After up to 3 year follow-up there is no significant difference in mean HbA1c level, 3 years postoperatively 69% of LSG patients reach HbA1c levels below 6.2% and 50% of LRY patients. Preoperatively 28% of LSG patients and 47% of LRY patients were insulin dependent using mean cumulated insulin doses of 85 IU and 130 IU. After 3 years of follow-up none of the patients was still insulin dependent. LSG patients reached complete diabetes remission (DR) in 73% of the cases 3 years after surgery and LRY patients reached DR in 50% of the cases.

Summary: DR rates after bariatric surgery are high. Our data are not able to show any superiority of LRY over LSG.



O.005 Early Results of Metabolic Surgeries in Patients with BMI<35 at a Rural Indian Hospital

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Aim: To assess and compare the results of four surgeries- Laparoscopic sleeve gastrectomy (LSG), LSG+ Diverted ileal interposition and LSG + Duodeno jejunal bypass, in the control of type II diabetes mellitus.

Method: In a prospectively controlled trial 50 patients suffering from Type II diabetes mellitus were subjected to one of the four metabolic surgeries. The trial was registered at the national clinical trial registry of India (CTRI/2010/091/002938). The patients were selected for the surgery after preoperative special investigations like serum C-peptide, serum Insulin, Anti-islet cell antibody, Anti GADA antibody, bA1c. Only patients with BMI<35 were included in the study.

Results: Out of the 50 patients 35 patients (70%), were off diabetic medications, 8 patients (17%) were on decreased dose of insulin, 5 patients (10%) were on oral hypoglycemic and in 2 patients there was no response after the surgery. Out of 15 patients with more than one year follow-up 10 patients (66.5%) were on remission.

Conclusion: Our preliminary observations demonstrated the feasibility, safety, and efficacy of these novel surgical procedures in type 2 diabetes. Further long-term data from more patients are necessary to confirm these findings.

O.006 Impact of Laparoscopic Sleeve Gastrectomy on Type 2 Diabetes Mellitus in Patients with BMI 30–35 Kg/m²

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Introduction: Excellent results of Laparoscopic Sleeve Gastrectomy (LSG) in morbidly obese patients with Type 2 diabetes mellitus have prompted studies on its use in patients with BMI 30–35 Kg/m².

Methods: 10 patients with BMI 30–35 kg/m² and T2DM underwent LSG. The primary endpoints included impact on diabetic medication, fasting plasma glucose and glycated hemoglobin at 3 months. Secondary outcomes included weight loss, changes in plasma insulin secretion, insulin resistance and beta cell function. Gastric emptying time, fasting and post meal GLP1 and Leptin levels were measured before and at 3 months after surgery.

Results: The mean pre operative BMI was 33.6 ± 1.5 kg/m². Six patients were on oral hypoglycemic agents (OHA) and four were on insulin as well as OHA. At 3-months follow-up, all 6 patients on OHA were off any anti-diabetic medication. Insulin could be stopped in all four patients. Remission of diabetes, defined as glycated hemoglobin (HbA1C) < 6.5% and Fasting Plasma Glucose (FPG) <126mg/dl with complete stoppage of diabetic medication, was seen in 4 patients. The changes in the meal stimulated plasma insulin at 30 minutes correlated well with an associated increased meal stimulated plasma GLP1. Median fasting leptin levels reduced from 34.17 ng/ml to 11.03 ng/ml. Mean gastric emptying time decreased from 34 to 22.2 min.

Conclusion: LSG led to profound impact on diabetes in all patients with BMI 30–35 Kg/m². Faster gastric emptying, increased meal stimulated GLP1 and

decreased leptin could be the possible mechanisms apart from weight loss contributing to remission/improvement of T2DM.

O.007 Predicting Factors of Remission in Patients with Type 2 Diabetes and Body Mass Index Between 25 and 35 Kg/mt2 After Gastric Bypass

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Introduction: Different surgical groups have conducted research to assess the effectiveness, risks and benefits of surgical treatment in type 2 diabetic patients. It is essential to identify preoperative clinical factors that are associated with better outcomes. The objective of this study is to identify predictors of remission of the disease in patients undergoing gastric bypass.

Methodology: This prospective study included 48 patients with type 2 diabetes with BMI between 25 and 35 Kg/mt2 undergoing laparoscopic gastric bypass for diabetes management as a research protocol, with up to two years of follow up. Remission was defined as fasting blood glucose less than 100 mg / dl, glycosylated hemoglobin less than 6.0% and no use of oral hypoglycemic agents or insulin. We divided the patients into two groups: Group A that meets criteria for remission and Group B that did not meet criteria for remission at 2 years of surgery. To identify predictors of remission we analyzed age, duration of diabetes, BMI, C-peptide and glycated hemoglobin preoperatively. Wilcoxon T Student statistical tests were performed to compare both groups (significance p <0.05), and a bivariate and multivariate logistic regression analysis (confidence interval of 95%).

Results: At 2 year follow-up, 36 patients achieved remission (Group A) and 12 patients did not achieve remission (Group B), 75% and 25% respectively. The average age for Group A was 49.1 ± 8.1 and for Group B 55.4 ± 5.4 years (p = 0.008), BMI Kg/mt2 31.2 and 27.3 (p = 0.002), glycosylated hemoglobin 7.6 ± 1.9 and 8.6 ± 2.0% (p = 0.07), C-peptide 2.8 ± 1.0 and 3.5 ± 1.5 ng / ml (p = 0.06) and the duration of diabetes 4.6 ± 3.1 and 8.1 ± 3.5 years (0.001) respectively. Age less than or equal to 50 years OR 6.3 (0.89 to 44.78), higher preoperative BMI OR 1.3 (0.99 to 1.72) and shorter evolution of diabetes OR 0.8 (0.62 to 1.06) were associated with greater likelihood of remission.

Conclusion: Predictors of remission of type 2 diabetes Mellitus in patients undergoing gastric bypass identified in our study are the shortest duration of diabetes, younger age and a higher BMI preoperatively.

O.008 The Effect of Duodenojejunal Bypass for Korean T2DM Patients Below BMI 25 Kg/m²: One Year Follow Up

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Introduction: The goals of this study are to evaluate the effect of duodenojejunal bypass (DJB) for T2DM patients below BMI 25 kg/m² in a one year follow up. DJB is a type of metabolic surgery especially proposed for T2DM patients with lower BMI. In Asia, T2DM patients with low BMI are more common compared with western countries.

Methods: In this prospective observational study, there were 31 type 2 diabetic patients who underwent duodenojejunal bypass at Inha University Hospital from July 2009 to January 2011. We did laboratories such as 75g oral glucose tolerance test, Insulin level and HbA1C, etc. The criteria for evaluation of the effect of DJB: remission is below HbA1C less than 6.0 without medication; improvement is below HbA1C less than 7.0 without medication or HbA1c less than 6.5 with reduced medication.

Results: A total of 31 patients (19 men and 12 women) were included. Mean BMI was 23.1 ± 1.3 kg/m² and the mean duration of T2DM was 8.3 ± 4.7 years. There was a significant decrease of 75g OGTT levels, increase insulin secretion which is not significant comparing preoperative levels with levels of 12 months follow-up. 13.3% showed diabetic remission and 26.7% diabetic improvement. The rates of remission and improvement much declined comparing with that of postoperative 1 week although those were determined by fasting and postprandial 2 hour level of glucose. The patient's age is related to post-surgery remission and improvements. All glucose levels of OGTT after DJB were lowered compared with those of preoperative. As for insulin levels, they were much decreased a week after DJB and much increased at 3 months and 12 months.

Conclusions: Early effects on T2DM after DJB could be estimated as one of good modalities. The rate of improvement was decreasing with time passing. Although the effectiveness seems to be unacceptable, change of OGTT and insulin level after DJB suggest that DJB has some positive effect on beta cell function in T2DM patients with T2DM.

0.009 Metabolic Surgery ABCD Score: Predisting the Success of Surgical Treatment Diabetes

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Background: We had proposed a simple multidimensional grading system, Age, BMI, C-peptide and Duration of DM (ABCD) Score, can predict the success of DM by gastric bypass surgery. However, there has a space for improvement.

Methods: We used a new ABCD score to evaluate the remission of DM in a prospective collected cohort of 319 patients.

Age, Body-Mass Index, C-peptide and Duration of diabetes (ABGD) score

Variable	Points on ABCD score			
	0	1	2	3
Age	< 40	≥ 40		
BMI (kg/m ²)	< 27	27 -34.9	35-41.9	≥ 42
C-peptide (ng/ml)	< 2	2 - 2.9	- 4.9	≥ 5
Duration of DM (years)	> 8	4 - 8	1 - 3.9	< 1

Results: There were 192 DM remissions among the 319 patients (60.2%) in the first year and 41 out of 57 (71.9%) at the 3rd year. Patients with their T2DM remission after surgery had a higher ABCD score than those without (8 ± 4 vs. 4 ± 4 , $p < 0.05$). Patients with higher ABCD score were also at higher rate of success in T2DM remission (from 0%, 15.6%, 28.9%, 40.8%, 64.5%, 66.7%,

69%, 76.5%, 95.6%, 100%, 100% in score 0 to 10). Metabolic surgery should be recommended only for patients with ABCD score more than 3.

Conclusions: The ABCD Metabolic Surgery Score, a simple multidimensional grading system can predict the success of T2DM treatment by bariatric surgery.

0.010 A Comparison of Bariatric Surgery with Medical Therapy in Obese Type II Diabetic Patients –A Meta Analysis

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Introduction: Bariatric surgery helps in improving and achieving remission of type 2 diabetes but its exact role in the treatment of diabetes is still not clear. In this study a systematic review and meta analysis was performed comparing bariatric surgery to intensive medical therapy in patients with type 2 diabetes mellitus to define the role of surgery in the treatment of diabetes.

Methods: A systematic search was performed to identify all randomized controlled trials (RCT) comparing any form of bariatric surgery with best available medical treatment for diabetes. Eligibility criteria included studies with well defined terms for remission of diabetes; best available medical therapy and a minimum follow up of 1 year. The primary outcome was assessment of remission and control of diabetes.

Results: Eligible studies included 3 RCTs comparing 170 patients in the surgical arm to 100 patients in the medical arm. The remission rate of 57% after surgery was significantly better than 12.6% seen after medical treatment ($p < 0.001$, Odds ratio: 16). The decrease in HbA1c levels was found to significantly more in the surgical arms (2.7% vs 0.92%, $p < 0.01$). Total triglyceride (53% vs 20%, $p = 0.03$) and HDL (24% vs 7.3%; $p < 0.01$) levels were also significantly improved in the surgical arms.

Conclusion: Bariatric surgery offers the opportunity of a better chance of remission and control of diabetes and improvement in lipid profile compared to the best available medical therapy and should be considered as an effective treatment option early in the course of type 2 diabetes in morbidly obese patients for best results.

0.011 Impact of Anastomosis Type on the Remission for Non-obese Type 2 Diabetes Patients After Subtotal Gastrectomy

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Introduction: To reveal the duodenal switch effect of the reconstruction method, we investigated the remission rates of type 2 diabetes comparing Billroth I to Billroth II anastomosis after subtotal gastrectomy for cancer.

Methods: Of 404 gastric cancer patients who had undergone radical subtotal gastrectomy from January 2008 to December 2010, 49 were identified as the study population. Diabetes remission rates, the percentage change in fasting plasma glucose levels, glycated hemoglobin levels, weight, body mass index, and fasting total cholesterol levels at 2 years were observed. Outcomes were compared using propensity scores and inverse-probability-weighting adjustment that reduced treatment-selection bias. Covariate-adjusted logistic regression models were assessed.

Results: The 2-year diabetes remission rate for the 23 patients who underwent BI reconstruction was 39.1% compared with 50.0% for the 26 patients who underwent BII reconstruction. At 2 years, the BII group showed lower glycated hemoglobin levels (BI, 6.4%; BII, 6.1%; $P = .003$) and had greater percent reductions in their average glycated hemoglobin levels from baseline than patients who underwent BI reconstruction (BI, -11.6%; BII, -14.5%; $P = .043$). BII

reconstruction was significantly associated with an increased diabetes remission rate (OR, 3.22; 95% CI, 1.05–9.83) in covariate-adjusted logistic regression analysis.

Conclusions: These propensity score-adjusted analyses of patients who had undergone subtotal gastrectomy indicated that BII reconstruction was associated with increased diabetes remission compared with BI reconstruction during the 2-year follow-up period. This study suggests the possibility of using the surgical duodenal switch for the treatment of nonobese type 2 diabetes patients.

O.012 Improvement of C Peptide Zero BMI 24–34 Diabetic Patients After Tailored One Anastomosis Gastric Bypass

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Background: Although bariatric surgery proved to be a very effective method in the treatment of patients in whose pancreas still produce insulin (type 2 diabetes), the accompanied metabolic syndrome and their diabetes complications, there is no information on the effect of this type of surgery in BMI24-34 patients when pancreas do not produce insulin at all (type 1, LADA and long term evolution type 2 diabetes among others).

Patients and methods: We report preliminary data of a serie of 11 patients all with a C-peptide values below 0.0 ng / ml. They were followed for 6 to 60 months (mean 19 months) after surgery. We studied the changes in glycemic control, evolution of the metabolic syndrome and diabetes complications after one anastomosis gastric bypass (BAGUA).

Results: All values relative to glycemic control were improved HbA1c (from 8.9±0.6 to 6.7±0.2%), FPG (Fasting Plasma Glucose) (from 222.36±16.87 to 94±5 (mg/dl)) as well as the daily insulin requirement of rapid (from 40.6±12.8 to 0 (U / d) and long-lasting insulin (from 41.27± 7.3 U/day to 15.2 ± 3.3 U/day). It resolved 100% of the metabolic syndrome diseases as well as severe hypoglycaemia episodes present before surgery and improved some serious complications from diabetes like retinopathy, nephropathy, neuropathy, peripheral vasculopathy and cardiopathy.

Conclusions: Tailored one anastomosis gastric bypass in BMI24-34 C peptide zero diabetic patients eliminated the use of rapid insulin, reduced to only one injection per day long-lasting insulin and improved the glycemic control. After surgery disappear metabolic syndrome and severe hypoglycaemia episodes, and improves significantly retinopathy, neuropathy, nephropathy, peripheral vasculopathy and cardiopathy.

O.013 Cine Magnetic Resonance Imaging Revealed Enhanced Intestinal Motility During Oral Glucose Tolerance Test After Laparoscopic Sleeve Gastrectomy

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Introduction: Enhanced secretion of glucagon-like peptide-1 (GLP-1) has been suggested as a possible mechanism underlying the improvement in type 2 diabetes mellitus (T2DM) after laparoscopic sleeve gastrectomy (LSG). However, the reason for enhanced GLP-1 secretion during glucose challenge after LSG remains unclear because LSG does not include bypass procedure such as in Roux-en-Y gastric bypass. In the present study, we focused on the effects of LSG on GLP-1 secretion and intestinal motility during the oral glucose

tolerance test (OGTT) using cine magnetic resonance imaging (MRI) before and 3 months after LSG.

Method: LSG was performed in 12 obese patients with a body mass index >35 kg/m². Six patients had T2DM. OGTT was performed before and 3 months after LSG. Body weight and hemoglobinA1c (HbA1c), as well as glucose, insulin and GLP-1 levels during OGTT were examined. Intestinal motility during OGTT was also assessed using cine MRI.

Results: Body weight was significantly decreased after surgery in all the cases. HbA1c was markedly decreased and great improvement of glucose tolerance with enhancement of insulin and GLP-1 secretion was observed in all the diabetic subjects. In all cases, GLP-1 secretion during OGTT was enhanced and cine MRI showed markedly increased intestinal motility at 15 and 30 min during OGTT after LSG.

Conclusion: LSG rapidly improved glucose tolerance and insulin secretion. LSG leads to accelerated intestinal motility, which may be involved in the mechanism underlying enhanced GLP-1 secretion during OGTT after LSG.

O.014 Attitudes and Concerns of Diabetic Patients Towards Metabolic Surgery as Treatment of Diabetes

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Introduction: In addition to weight loss, metabolic surgery has been shown to improve glycaemic control over intensive medical therapy, even achieving diabetes remission among patients with obesity. This is the first study to examine perceptions and concerns of diabetic patients towards metabolic surgery.

Methods: We recruited 100 patients in a specialized diabetic clinic in a tertiary centre in Singapore. Participants independently completed a questionnaire relating to diabetes, standard therapy, laparoscopic gastric bypass and sleeve gastrectomy. Questionnaire items are rated on a Likert scale measuring from slightly important (lowest score of 1) to extremely important (maximum score of 5). Univariate logistic regression was performed to identify predictors for interest in surgery.

Results: The sample consists of 55 males and 45 females with mean age 52.10 (range 20 – 78) and body mass index (BMI) 28.7. 62% of participants would consider surgery, despite only 11% being familiar with it. Predictive factors for interest in surgery are diploma holders or above (Odds ratio (OR) = 3.42; 95% CI, 1.31 - 8.94), BMI (OR = 1.07; 95% CI, 1.00 - 1.16) and microvascular complications (OR 2.78; 95% CI, 0.90 - 8.53). Important reasons for surgery were desire for remission (Likert scale 4.76 ± 0.67), prevent complications (Likert scale 4.48 ± 0.94) and reduce medications (Likert scale 4.34 ± 1.07). For those not keen on surgery, main reasons were satisfaction with current therapy (Likert scale 4 ± 1.40) and fear of surgery (Likert scale 3.97 ± 1.52). Risk of complications was the most important factor when considering surgery (Likert scale 4.52 ± 0.94).

Conclusions: A great proportion of diabetic patients would consider surgery as an option to improve their metabolic disorder. Raising awareness and patient education may mitigate fears towards surgery. To know that surgery could be part of the armamentarium for diabetes therapy and be readily acceptable by patients drives the advancement of metabolic surgery.

O.015 Is There a Relationship Between Helicobacter Pylori and Type 2 Diabetes Mellitus?

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Background: There are no guidelines with regards to routine histological examination of the remnant following Laparoscopic Sleeve Gastrectomy (LSG) for morbid obesity. Previous reports have suggested a causal relationship between *Helicobacter Pylori* (HP) and type 2 Diabetes Mellitus (T2DM). The aims of this study were to identify incidence of abnormalities in the specimens and to assess the relationship between HP and TD2M.

Method: All patients had LSG during the last five years were identified from our prospectively collected database. 3–5 representative sections are taken, stained with H&E and examined microscopically. Warthin Starry staining is used routinely to identify the presence of any HP.

Results: 403 specimens were examined. No dysplasia or cancer was found. 224 (54%) showed no abnormalities. 1 patient had an incidental GIST completely removed. 63 (15%) had a degree of HP gastritis and 96 (23%) had non HP gastritis. 2 had lymphocytic gastritis and 7 (1.7%) had benign fundal polyps. 333 cases (83%) had no HP present and of these 32% had T2DM. 70 cases (17%) had HP present and of these, 19 (27%) were in patients with TD2M. 14.6% T2DM were positive for HP compared with 18.6% of those who were HP negative.

Conclusion: 46% of gastric specimens after LSG showed abnormalities. 17% had HP requiring post operative eradication. There were comparable numbers of diabetic patients in the HP group and the non HP group. No relationship was found between HP and TD2M. Routine histological examination with HP testing of gastric specimen is however recommended after LSG.

O.016 Restrictive Bariatric Surgery: Is Gastric Band Still a Reliable Procedure?

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Introduction: Laparoscopic Gastric Band is once more the most common bariatric restrictive procedure performed in the world. LAGB seems to be increasing in popularity in USA, while in Europe there seems to be a slow trend away due to its long term complications. The outcomes after LAGB are not casual, but the result of a well planned bariatric activity: correct laparoscopic technique, experienced surgical team, well-engineered device and rigorous long-term follow-up. The purpose of the study is to access that performing this operation in high volume centers and using some surgical artifices, we can achieve significant results in weight loss and reduction of complications.

Method: From 2002 to 2012, 3211 patients underwent LAGB placements (Heliogast System). Procedures were rigorously performed by two surgical teams: “two-step” technique, band fixation and the meticulous follow up.

Results: Data on patient demographics, operative variables and postoperative outcomes were collected prospectively and reviewed retrospectively. The results were analyzed according to EWL%, BMI, mortality, conversion to open surgery, complications, percentage of follow up. Preoperative BMI was 42,3 for male and 41.5 for female respectively. No deaths. Conversion rate:2(0,07%),local impediment 2 (0,07%),slippage 144(4,48%),band erosion 14(0,43%), trocar hernia 28(0,87%),port disconnection or leaking 42(1,30%),poor weight loss 199(6,19%),band removal for psychological intolerance 17(0, 52%).Follow up 86 % at 7 years. Mean EWL at 7 years: 55,7% for female,53.9% for male.

Conclusion: Patients who are not committed to making long-term lifestyle changes should not be recruited for restrictive procedure. We assume that combining some simple technical artifices, we can achieve and maintain EWL>54%, with a low rate of complications. The more procedures performed in a hospital, the lower the risk of serious complications, likewise more-experienced surgeons and qualified multidisciplinary team fared better in terms of long term results.

O.017 A Prospective Evaluation Utilizing an Endoscopic Approach to Plicate Tissue for the Treatment of Primary Obesity: Our First 100 POSE (Primary Obesity Surgery, Endoscopic) Patients

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Background: The Incisionless Operating Platform (USGI Medical, San Clemente, CA, USA) utilizes the g-Cath EZ suture anchor, which has demonstrated the ability to durably plicate gastric tissue endoscopically at 2+ years. We report on use of these anchors for the treatment of primary obesity.

Methods: A prospective, consecutive 100 subject study was enrolled after institutional approval. Diet was advanced post procedure to full solids over 4–6 weeks to allow time for suture plication healing in all subjects. Weights were recorded at 1, 2, 3, 4, 6, 9 and 12 months. Subjects are being followed through 2 years.

Results: Subject demographics: (76%F/24%M). Mean age =42.4 (21–64). Mean baseline wt. =101.8±12.5 Kg; mean body mass index (BMI) = 37.5 ±3.9 (Range 28–47). A mean of 9.3 plications were placed in the fundus, 3.5 at the distal gastric body. Mean operative time, 64 minutes (29.0–126). Last 50 cases were done in <50 minutes. There were no mortalities. There was 1 SAE: fever 1 week post-procedure where a peri-splenic abscess was discovered and resolved with antibiotics. 6 month mean weight loss = 16.9 ±7.5 Kg (N=67); %Total Body Weight Loss was 16.6%. 9 month weight loss (N=41) revealed %EWL at 58.2% with %TBWL at 17.8%. Early 1 year Data (N=18) revealed %EWL/%TBWL at 64.1%/19.5% respectively. Most all with baseline and 2/6 month data reported reduced capacity and earlier satiety.

Conclusions: At early follow-up, this procedure appears to provide a safe and effective weight loss solution. Longer-term follow-up and further study are required.

O.018 Minimally Invasive Laparoscopic Adjustable Gastric Band Procedure: A Novel Technique Called Kang's Method

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Background: The main advantage of the laparoscopic adjustable gastric banding (LAGB) is a simple, safe and effective procedure for the weight loss. However, several complications after LAGB has been reported such as band erosion, slippage, gastric perforation, abscess, tube disconnection, port flip down and infection. These complications could be the main cause of failure after weight loss surgery using the gastric band. We have developed a novel technique (Kang's method) for LAGB without imbrication sutures.

Methods: From December 2010 and March 2013, 582 consecutive patients (male=95, female=487) underwent procedures using minimal invasive technique called Kang's method-umbilical approach, pars flaccida technique, no imbrication suture, port placement under the anterior sheath of the rectus muscle, single port used, liver retraction using Nylon suture material or Gold-finger. The Swedish band was used in 550 and the MID band in 32 patients. Those data such as demographic and morphologic, operative, and annual follow-up data were collected in a computerized data bank. The postoperative follow-up was done by the same surgeon.

Results: All patients were prospectively followed up for 2 year. All patients were available for follow-up at 2 year. The mean preoperative BMI was 34.5 kg/m² (31–53). The mean operative time was 26 ± 3 minutes (range 16–39). The fill volume at the operation was 8–10 mL. The rate of complication was 1%. The complications were slippage (3 cases), umbilical hernia (1 case) and device related infection (2 cases). There was no band erosion or mortality.

Conclusions: From our 2-year experience, we can state that LAGB procedure using Kang's methods is an effective bariatric procedure with few complications.

O.019 Trans-umbilical Laparoscopic Adjustable Gastric Banding: A UK Centre's Initial Experience of 213 Patients

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is one of the most common and least invasive bariatric operations. Some patients express dissatisfaction with visible epigastric access-port and other upper abdominal port scars. Various approaches have been tried to minimise the scars. We present our series with a trans-umbilical approach.

Methods: All patients operated by a single surgeon who underwent primary trans-umbilical LAGB between 2009 and 2012 were included in this study. Data was collected prospectively. Any patient who had postoperative complications was referred back to operating surgeon. The first port is placed trans-umbilical and the other ports are placed laterally along the right and left posterior axillary lines. This reduces any anterior abdominal scars apart from the liver retractor epigastric 5mm scar. The access-port is fixed over the rectus sheath to the left of the umbilicus using a polypropylene mesh.

Results: Between January 2009 and December 2012, 213 patients underwent primary trans-umbilical LAGB with a median follow-up of 33 months (range 1–48). Ninety eight percent (n=208) were females. The median age was 40 years (range 18–64). Three patients (1.4 percent) experienced infected bands leading to their removal. Six patients (2.8 percent) had access-port related complications. Four had tilted access-ports and 2 had infection.

Conclusion: Trans-umbilical LAGB is a feasible and safe alternative with minimal scars in upper abdomen. Further studies to compare patient satisfaction with final outcome need to be undertaken.

O.020 Endoscopic Stent Induced Erosion and Retrieval of Gastric Bands: A Developing Institutional Experience

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Introduction: The placement of fixed gastric bands to induce restrictive weight loss can be associated with long term complications. The removal of these bands is complex and cumbersome secondary to dense adhesions and scarring from the previous abdominal operations. Endoscopic gastric stent placement to force gastric wall ischemia and band erosion followed by endoscopic retrieval offers a potentially less invasive technique for removal.

Methods: A single institution retrospective review of all stent induced fixed band erosions was completed. The primary outcome measure was complete removal of band. Secondary outcome measures were any stent related complications as well as persistent stricture after band removal.

Results: Of the 28 cases identified (15 Molina bands, 12 vertical banded gastroplastys, 1 laparoscopic band), 23 (82.14%) bands were completely removed, 4 (14.3%) bands were not retrievable, and 2 bands (7.1%) were partially removed. Among the 23 patients with complete band removal, 7 (30.4%) patients had persistent gastric stricture and symptoms requiring operative revision. An average of 2.6 endoscopic procedures and stent placement of 15.0 days was observed. Stent related complications were found in 7 (25%) patients and included pain (14.3%), stent migration (7.1%), and nausea/emesis (3.6%).

Conclusions: Our data demonstrate that the majority of patients had complete removal of retained fixed gastric bands and did not require any further operative intervention. Gastric stent placement was well tolerated without significant complications showing that endoscopic stent induced gastric wall ischemia leading to

band erosion followed by endoscopic retrieval is a safe and less invasive technique that avoids the potential perils of re-operative surgery.

O.021 Long Term Outcomes of Laparoscopic Adjustable Gastric Banding (LAGB): A 12-year Experience

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Few long-term studies have been published on LAGB. Most reported high late complication and band removal rates. The aim was to determine the efficacy and complication rate 12 years after LAGB in our comprehensive center.

A total of 229 consecutive patients who had benefited from LAGB between January 1997 and December 1999 were contacted for evaluation. They all were offered a Lap Band, put through the «perigastric pathway».

Operative mortality was nil. One patient died from myeloma. Overall the rate of follow-up was 44,55% (102/229), with a mean age of 41,23 ys (20,4-61,79). 61 patients experienced 75 complications (59,8%) : 7 major (4 erosions, 1 perforation, 2 intolerances), 68 moderate (16 slippages, 10 esophageal dilatations, 10 intolerances, 18 port problems, 14 GERD). 50 bands have been removed (49%) : 23 alone, 9 with repositioning of a second low-pressure band through the pars flaccida, 11 switched to gastric bypass, 5 to sleeve gastrectomy, 2 to VBG. 61 still have a band in place (59,8%). The mean weight decreased from 121,97 kg (94–170) to 99 ±23,14, the BMI from 44,52 kg/m² (36,13-66,77) to 36,77± 8,41. Success (=EWL above 50%) concerns 38 patients (32,25%), 47 % (21/45) among the young patients. Long-term efficacy and safety of the LAGB are highly dependant on the selection of good candidates, with a multidisciplinary team responsible for dietetical preparation and postoperative long-lasting surveillance.

O.022 Are There Gender-specific Aspects of Gastric Banding? Data Analysis from the Quality Assurance Study of the Surgical Treatment of Obesity in Germany

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Background: 1 January 2005, the situation of bariatric surgery has been examined in Germany. All data are registered prospectively in cooperation with the Institute of Quality Assurance in Surgery at the Otto-von-Guericke University Magdeburg.

Methods: Data collection on the results of gastric banding procedures was started in 2005, and the data are registered in an online database.. Follow-up data were collected once a year. Participation in the quality assurance study is voluntary.

Results: Since 2005, 3453 gastric banding procedures have been performed at 88 hospitals. The mean age of patients was 40.7 years, and the mean body mass index (BMI) was 45.2 kg/m². BMI and comorbidities are significantly higher in male patients. Regarding gender-specific aspects, there are no significant differences in the perioperative complication rates. The amelioration rate of comorbidities in male patients is lower than in female patients.

Conclusion: Gastric banding in Germany is generally performed in patients with a BMI below 45 kg/m². The perioperative complication rate is low. Data from the Nationwide Survey of Bariatric Surgery (GBSR) in Germany show significant differences in preoperative comorbidities and their amelioration between male and female patients. There is a need for further evaluation of gender-specific aspects of gastric banding procedures to optimize patient selection, reduce specific postoperative complications and achieve long-term effects on weight loss and remission of comorbidities.

O.023 Physiologic Changes After Laparoscopic Gastric Plication

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Introduction: Laparoscopic gastric plication (LGP) with 13 years' experience has been well known as a restrictive bariatric method. More than 1000 LGP cases have shown 75% EWL during one year with rapid speed of weight loss at first 3 months (45% EWL). The aim of this study is to determine physiologic changes secondary to LGP, inducing the most rapid weight loss in morbid obese patients. **Method:** 35 morbid obese cases that underwent LGP were analyzed about two important physiologic points: a) serum level of Ghrelin (by Gas Chromatography) one hour before LGP, 1, 3 and 6 months after operation, b) assessment of body composition at the same time to check the ratio of fatty tissue during weight loss. The rate of EWL in compare to changes of body composition and serum level of Ghrelin was analyzed and body composition after weight loss in compare to before operation assessed.

Result: Rapid weight loss after LGP (45% EWL after 3 months) in compare to other restrictive methods increase the idea of new physiologic condition after LGP. Accelerated lipolysis based on body composition tests was the result of the new physiologic state. Very low level of Ghrelin in spite of normal gastric tissue after LGP has shown that intraluminal pressure of stomach is an important inhibitory factor for release of Ghrelin. Lack of appetite, daily metabolism and any calorie intake are reasons to release some unknown enzyme and hormones. It increases lipolysis and production of sugar (calorie source) somehow like sanction. The accelerated lipolysis that is not familiar to any nutritionist is the key point of rapid weight loss after LGP with physiologic changes of body composition.

Conclusion: LGP is a powerful restrictive bariatric operation with rapid weight loss secondary to lack of appetite and accelerated lipolysis due to especial physiologic changes.

O.024 Initial Experience in Laparoscopic Gastric Plication (LGP) Study Protocol and Mid-term Follow-up

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Introduction: Laparoscopic Gastric Plication (LGP) is a restrictive bariatric procedure that reduces gastric volume by plication of the gastric greater curvature. It is a reversible and allegedly less risky procedure regarding gastric leaks. We present our initial experience with this procedure following a study protocol.

Method: Case series. A 2-year prospective Study Protocol. Selection criteria: BMI 30 kg/m² and associated comorbidities. Descriptive statistics, clinical outcomes, percentage of excess BMI loss (%EBMIL) and improvement of comorbidities according to standardized follow-up (FU).

Results: From January 2011 to December 2011, 23 female obese patients were submitted to LGP, all procedures laparoscopically completed. Mean preoperative age 42.8 (±7.6) years and BMI of 39.4 (26–44.9) kg/m². Two patients required

reoperation due to an early complication: one leak with perigastric abscess and one case of small bowel ischemia due to portomesenteric vein thrombosis. One patient presented an antropiloric intussusception. There was no mortality in this series. Mean %EBMIL were 45.5 %, 52.2 %, and 68.4% after 3, 6, and 12months FU, respectively.

Conclusion: In our experience, when compared with Laparoscopic Sleeve Gastrectomy, LGP has poorer outcomes regarding %EBMIL and no clear advantages. To draw evidence-based recommendations, larger studies with longer FU are needed.

O.025 Gastric Plication Versus Gastric Sleeve -A Single Center Short- Term Comparison

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Introduction: Laparoscopic Greater Curvature Plication, a new restrictive bariatric operation has been introduced into armamentarium of bariatric/metabolic surgery. To assess its current position we present a comparison of the two most popular volume reducing gastric surgeries Gastric Sleeve (GS) and Gastric Plication (LGCP).

Method: From the total number of 900 laparoscopic bariatric/metabolic surgeries performed by the presenter 350 were GS and 200 were LGCP. Two comparable groups of patients according to the procedure performed were evaluated at time of the operation and 6, 12, 18 and 24 months after the surgery. As the follow up in LGCP patients has been short, only short-term results up to 2 years could be obtained.

Results: The average operation time was slightly shorter in LSG group (approx. 15 minutes). Both the serious early complications and reoperations were slightly higher in LSG group (2% and 2.6% compared to 1.5% and 2% in LGCP) but later reoperations were needed more frequently in patients after LGCP (2.5% compared to 1.4% in LSG). Hospital expencies are higher in LSG. Postoperative EWL was significantly lower in LGCP group compared to LSG group only in 6 months after the surgery, later in smaller numbers of participants the difference was not significant.

Conclusion: Short term results of LGCP are comparable to LSG. Further concerns about long term effects on weight loss and the possible side effects on esophageal reflux should be kept in mind as LGCP might lead to much more troublesome conversion to gastric bypass if needed, comparing to LSG.

O.026 Laparoscopic Gastric Plication Versus Sleeve Gastrectomy, a Randomized Study

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Introduction: Laparoscopic Gastric Plication (LGP) has gained importance in the treatment of morbid obesity. It seems to replicate Laparoscopic Sleeve Gastrectomy (LSG) results with fewer complications. We proposed a randomized study in which we compared LGP to LSG.

Method: Patients affected by morbid obesity referred at our Institution from October 2011 to August 2012, were randomized into two groups. Patients enrolled in the first arm underwent LSG, while patients in the second arm underwent LGP. Intraoperative and postoperative complications were recorded and compared using Chi-square test. Follow-up visits were scheduled at 1, 3, 6 and 12 months after surgery. Measures of change from baseline at different time were analyzed with the student *t* test and the paired samples *t* test.

Results: The two groups resulted preoperatively homogeneous in age, weight, BMI, EW%. Time of intervention was similar: 58.3±17.9 minutes for LSG and 63.3±6.5 minutes for LGP (*p*=0.32). Nor intraoperative nor postoperative

complications were noted in both groups. After one year follow-up we observed, in both group, a progressive and significant ($p<0.05$) weight loss; no significant difference in mean BMI reduction or mean EWL% increase were noted between the two populations.

Conclusion: After one year follow-up, LGP and LSG seem to achieve similar results in terms of BMI reduction and EWL% increase. No significant differences were noted between the two populations in terms of time of intervention and intraoperative or postoperative complications.

O.027 Gastric Plication Treatment Outcomes in Obese and Type 2 Diabetic Patients – Two Year Follow Up

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Introduction: Gastric plication (LGCP) is a novel operation in bariatric/metabolic field, anatomically close to sleeve gastrectomy. After the LGCP, weight reduction and T2DM improvement is expected to be in between those after adjustable gastric band and sleeve gastrectomy.

Methods: Weight changes and change in T2DM parameters in diabetic patients were recorded 24 months after the LGCP operation. 160 patients were followed-up, 46 (37 female, 9 male) type 2 diabetics. Weight, BMI change, %EWL, glycaemia, HbA1c, IRI, HOMA-IR, fat mass, waist circumference, triglycerides and cholesterol changes were analyzed.

Results: LGCP resulted in mean weight loss ($13.3\pm 8.6\text{kg}$ $p<0.1$), BMI decrease (41.6 ± 6.2 to 35.7 ± 4.1 / $p<0.1$), mean % EWL ($51.9\pm 10.2\%$), glycaemia decrease ($9.3\pm 2.8\text{mmol/l}$ to $5.2\pm 1.3\text{mmol/l}$ / $p<0.1$), HbA1c decrease ($6.1\pm 1.2\%$ to $4.7\pm 0.8\%$ / $p<0.1$), IRI change from ($27.2\pm 2.8\text{mol/l}$ to $11.2\pm 4.4\text{mol/l}$ / $p<0.1$), HOMA-IR decrease (11.1 ± 1.3 to 3.5 ± 2.0 / $p<0.1$), fat mass (49.2 to 40.6%), waist circumference from mean $114\pm 1\text{cm}$ to $98\pm 2\text{cm}$, triglycerides (1.9 to 1.3mmol/l , $p<0.1$), no change in cholesterol levels. One month after LGCP T2DM remission (discontinuation of anti-diabetic medication) occurred in 45.8% and in 46.6% it was possible to cut the anti-diabetic medication to half. 75% of insulin dependent diabetics were off insulin in one month after LGCP. One year after LGCP remission and improvement in T2DM was observed in 94% of patients.

Conclusion: LGCP is a new, so far promising bariatric procedure in regards of both, statistically significant weight loss and metabolic effects. However larger/long-term studies are needed to be able to draw firm conclusions.

O.028 Restrictive Bariatric Surgery in BMI 30-35kg/m² Asian Patients

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Introduction: Bariatric surgery for those with (¹) BMI 35kg/m² is proven to produce sustainable weight lost and substantial resolution of co morbidities. Sufficient evidences also showed that increased risk of multiple co-morbidities, impaired quality of life and higher mortality were observed when BMI 30kg/m². This study is aimed to determine the safety and efficacy of laparoscopic restrictive bariatric procedure on weight loss and resolution of associated co morbidities in BMI 30-35kg/m² Asian patients.

Method: Patients who underwent laparoscopic adjustable gastric banded plication (LAGBP) or laparoscopic sleeve gastrectomy (LSG) in our center from Jan 2007 till Dec 2011 were enrolled. Demographic data and surgical results were analyzed retrospectively.

Results: Totally 153 patients (M/F: 31/122) were enrolled. 117 patients underwent LSG and 36 patients underwent LAGBP. At one year after surgery, mean BMI was reduced from $32.65\pm 1.49\text{kg/m}^2$ to $24.51\pm 2.27\text{kg/m}^2$; and

excess weight loss (%) was $70.00(\pm 21.0\%)$. Type 2 diabetes mellitus remission occurred in all patients (10/10) and 70% achieved resolution of hypertension. Major complications that occurred were leakage in 4(2.61%) patients; all need laparoscopic re-operation, but no difference in these two types of surgeries. Late complications (gastric ulcer, gastric tube stricture, gallstone cholecystitis and severe GERD) were observed individually in four patients. There was no mortality.

Conclusion: Laparoscopic restrictive bariatric surgery is safe and effective in BMI 30-35kg/m² patients, with good weight loss and resolution of co-morbidities.

O.029 Laparoscopic Adjustable Gastric Banded Plication: A Comparative Study of Two Different Surgical Techniques

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Introduction: Laparoscopic adjustable gastric banded plication (LAGBP) is a novel bariatric procedure, but non-standardized technique provoked unexpected complications and results. We adopted standardized technique which includes preserving gastroepiploic vessels and standard gastric plication volume. The aim of this study was to analyse the results of standardized technique and compare it with the previous technique.

Methods: Patients who underwent LAGBP from January 2012 to January 2013 were included in the study. The data of patients undergoing LAGBP (Group 1) in the first 6 months was compared with those undergoing standardized LAGBP (Group 2) in the next 6 months.

Results: Each group had 40 patients with 13 males and 27 females. The mean age is similar in both groups, which in groups 1 and 2 were 33.4 years (range 19–55) and 34.7 years (range 18–60) respectively. The mean BMI was 39.2kg/m^2 (range 30.90-52.44) and 40.4kg/m^2 (range 32.62-52.86). The mean operative time was 108.1 minutes (range 41–189) in Group 2 which was significantly less compared to Group 1[125.3 minutes (range 63–192)] ($p = 0.048$). The duration of hospital stay was comparable in both groups. There were 5 complications (2 major; 3 minor) in Group 1 and 2 complications (both minor) in Group 2. No mortality was observed in this study.

Conclusion: Standardized technique of LAGBP revealed shorter operation time and minimal complication rate, and ensures the feasibility, safety and reproducibility of this new bariatric procedure.

O.030 Laparoscopic Gastric Plication Versus Mini-gastric Bypass Surgery in the Treatment of Morbid Obesity: A Randomized Clinical Trial

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Background: laparoscopic gastric plication (LGP) is emerging as a safe and effective bariatric procedure. However, there are no reports on the comparison between the efficacy and complications of LGP and laparoscopic mini-gastric bypass (LMGB), a standard bariatric procedure. The aim of this study is to compare safety and efficacy of LGP and LMGB in the treatment of morbid obesity in a one-year follow-up study.

Methods: The study was conducted at a university hospital in Iran. Forty patients met the National Institutes of Health (NIH) criteria, and were randomly assigned to receive either LGP (N=20) or LMGB (N=20). Preoperative data were collected. Early and late complications, body mass index (BMI), excess weight loss (EWL) and obesity related co-morbidities were determined at the 1 year follow-up.

Results: Operative time as well as the mean length of hospital stay were shorter in LGP group (71.0 versus 125.0 minutes; $p < 0.001$) and (1.6 versus 5.2 day; $p < 0.001$), respectively. The mean percent of excess weight loss (%EWL) at 12 months follow-up was 66.9% in LMGB group and 60.8% in LGP group ($p = 0.34$). Improvement or remission was observed in all comorbidities in both groups, with the exception of hyperlipidemia which remained unresolved in 4 patients. Lower incidence of iron deficiency occurred in the LGP group ($p = 0.035$). Re-hospitalization and reoperation were not required in any cases.

Conclusion: Both LGP and LMGB are effective weight loss procedures. LGP proved to be a safer, simpler and cheaper procedure compared to LMGB with a lower risk of iron deficiency during a 1-year follow-up study.

O.031 Sleeve vs Plication 256 Cases Non Randomized Study

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Method: We have done 256 Bariatric cases of gastric sleeve and gastric plication in one year (February 2011 till September 2012) mostly in UAE (18 cases in Lebanon and one case in Barcelona). All done by one surgeon. 105 cases of Gastric Plication, LGCP (71 females and 34 males) BMI 37–55 Kg / m² mean BMI 44.2, age between 14–55 years. We had 151 cases of Gastric Sleeve, LGS (91 females and 64 males) BMI 39–67, mean; 48.3 and age 17–53 years. All were non-randomized selection considering Gastric Plication LGCP for low BMI less than 45kg/m² and Sleeve, LGS, for high BMI more than 45kg/m²

Results: In LGP vs LGCP; Leak occurred in 3 /151 (2 %) vs 1/105(1%) . Bleeding 2/151(1.32%) vs 0% Intra-abdominal abscesses: 1/151(0.66) Vs 0%. Wound infection 2/151 (1.3%) in LGS vs. 0% in LGCP. Port site hernia 1/151 (0.66%) vs. 0% in LGCP. Obstruction or Stenosis 0% VS.2/105 (2%) in LGCP, one resolved by surgical redo and the other by observation.

O.032 Initial Experience with Total Robotic Roux-en-Y Gastric Bypass

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Introduction: Robotic bariatric surgery has been introduced as an alternative to traditional laparoscopy with a potential advantage of less complications and improved ergonomics. The role of robotic technique in morbidly obese patients

has not been yet established. We investigated a rationale of setting up a bariatric robotic program.

Patients: 26 patients (18 female, 8 male) underwent robotic gastric bypass. 13 patients had a combined laparoscopic-robotic surgery, while remaining 10 had total robotic gastric bypass with hand sawn gastrojejunostomy (GJ). 9 patients were super morbid obese with BMI more than 50 and massive central obesity. Average preoperative BMI was 47.

Results: All surgeries were completed robotically without conversion to laparoscopy or open. No leaks were found postoperatively. One patient had GJ narrowing needed revision; 3 patients had prolonged nausea and 4 bruising around trocar sites. Postoperative pain as measured by narcotic use was less comparing to traditional laparoscopy. Creating hand sawn GJ anastomosis was relatively easy in patients with massive central obesity and high BMI. Operating time was initially up to 4 hours, then gradually decreased to less than 2 hours per case.

Conclusion: We have found that robotic technique may be a favorable option in high risk, super-morbid obese patients, in whom traditional laparoscopy is very challenging and may result with complications. Robotic technique may be reproducible for a broad range of BMI and abdominal walls.

O.033 Robotic Gastric Bypass Surgery: Applying the IDEAL Model in Assessment and Stages of Surgical Innovation

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Introduction: The IDEAL model was created by the Balliol Colloquium group to delineate stages of innovation, development, exploration, assessment, and long-term study specifically for surgical innovations. In this study we aim to determine the stage of robotic bypass surgery (RBS) in the innovation scale.

Methods: The article describing the IDEAL model was emailed to a group of bariatric surgeons and they were asked to determine the stage of RBS within the IDEAL innovation scale.

Results: A response rate of 55% was achieved. 85% of participants thought that RBS is at the exploration phase while 15% thought that its at the assessment phase.

Conclusion: Using a novel scale to evaluate surgical innovation, RBS was thought to be at the exploration phase of the scale, which requires either at least a non randomized controlled trial or multiple interrupted time series studies for evaluation of outcome.

Table: Stages of surgical innovation

	1 Idea	2a Development	2b Exploration	3 Assessment	4 Long-term study
Purpose	Proof of concept	Development	Learning	Assessment	Surveillance
Number and types of patients	Single digit; highly selected	Few; selected	Many; may expand to mixed; broadening indication	Many; expanded indications (well defined)	All eligible
Number and types of surgeons	Very few; innovators	Few; innovators and some early adopters	Many; innovators, early adopters, early majority	Many; early majority	All eligible
Output	Description	Description	Measurement; comparison	Comparison; complete information for non-RCT participants	Description; audit, regional variation; quality assurance; risk adjustment
Intervention	Evolving; procedure inception	Evolving; procedure development	Evolving; procedure refinement; community learning	Stable	Stable

Method	Structured case reports	Prospective development studies	Research database; explanatory or feasibility RCT (efficacy trial); diseased based (diagnostic)	RCT with or without additions/modifications; alternative design	Registry; routine database (eg, SCOAP, STS, NSQIP); rare-case reports
Outcomes	Proof of concept; technical achievement; disasters; dramatic successes	Mainly safety; technical and procedural success	Safety; clinical outcomes (specific and graded); short-term outcomes; patient-centred (reported) outcomes; feasibility outcomes	Clinical outcomes (specific and graded); middle-term and long-term outcomes; patient-centred (reported) outcomes; cost-effectiveness	Rare events; long-term outcomes; quality assurance
Ethical approval	Sometimes	Yes	Yes	Yes	No
Examples	NOTES video	Tissue engineered vessels	Italian D2 gastrectomy study	Swedish obese patients study	UK national adult cardiac surgical database

O.034 Endobarrier Duodeno-Jejunal Bypass Liner

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The EndoBarrier is a 60 cm endoscopically placed endoluminal sleeve, which is made of Teflon and placed into the first part of the duodenum and proceeds 60 cm through to the small bowel bypassing effectively the duodenum and first part of the jejunum (often referred to as a duodenojejunal bypass liner).

Studies have been done with implantations up to one year with follow-up results over two years following explantation and these indicate that there is substantial weight loss initially 12 to 24 weeks, which is often maintained for the duration of the implant and this weight loss often extends for further 9 to 12 months following explantation. Good improvement in glycaemic control in type II diabetes is a major feature of the EndoBarrier. Many patients have come off both insulin and other medications for type II diabetes and these effects have shown very early in the implantation and once again the beneficial effects in type II diabetes carry on 9 to 12 months after explantation of the device.

The device, as mentioned, is employed endoscopically under general anaesthetic usually and done as a day procedure.

Discussion will include the history of the device and technique and as we have now implanted more than 40 devices in Australia this will include the results, both weight loss and improvement in comorbidities will be discussed, as well as the complications, reason for early explantation, adverse events and techniques of employing and removing the device and follow-up details.

O.035 Gut Hormone Responses After Implantation of a Duodenal-Jejunal Bypass Liner and the Role in Remission of Type 2 Diabetes in Obese Patients

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Introduction: Endoscopic implantation of a Duodenal-Jejunal Bypass Liner (DJBL), or EndoBarrier, is a novel bariatric technique to induce weight loss and remission of type 2 diabetes (T2D). Placement of the DJBL mimics the duodenal-jejunal bypass component of the Roux-en-Y gastric bypass (RYGB) procedure. As gut hormones are known to change substantially after RYGB surgery, in our study we now evaluated gut hormones responses after implantation of the DJBL. **Method:** Fourteen (8 male, 6 female) obese T2D subjects (BMI 33.7 ± 0.9 kg/m², duration of type 2 diabetes 8.0 ± 1.4 years) were selected for

implantation of a DJBL. Fasting plasma levels of glucose, C peptide, HbA1c and gut hormones ghrelin, GIP and GLP-1 were analysed before and at 7 and 28 days after DJBL implantation.

Results: Plasma HbA1c levels were significantly decreased after DJBL implantation and a 40% reduction was found in diabetes medication usage (p<0.05). Ghrelin was found significantly elevated, with the highest induction in the first 7 days post-implant. Although the GIP response showed high variation between subjects, GIP tended to decrease 28 days after implantation (p=0.09). Remarkably, GLP-1 levels showed a significant 'dip' at day 7 post-implant, which correlates with the intake of solely pureed/liquid food in the first week post-implant.

Conclusions: Implantation of a DJBL results in an early substantial remission of T2D, comparable to results seen after RYGB surgery. Interestingly, in contrast to RYGB surgery, implantation of the DJBL seems to preserve normal physiological responses of gut hormones that are related to nutritional status.

O.036 Dynamics of Lipid Profile Changes After Duodenojejunal Bypass Liner (DJBL) Placement

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Introduction: Obesity is associated with alterations in lipid profile (LP). Weight loss induced by DJBL in obese patients is accompanied by improvement or normalization of LP in most individual. We sought to determine the dynamic of LP changes in morbid obese subjects treated for one year with the DJBL.

Methods and Procedures: Charts from 61 consecutive DJBL-treated obese patients for 12 months were reviewed. Demographics, anthropometrics, weight loss, and LP were evaluated at baseline, 1, 2, 3, 6, 9 and 12 months after DJBL placement. **Results:** Forty-two (42) patients were women (68%). Baseline age and body mass index (BMI) were 35.4±9.7 years and 43±5.6 kg/m², respectively. At baseline, 33 patients (54%) had dyslipidemia based on ATPIII criteria. Baseline TC, HDL, LDL and TG levels were 193±34, 43±9, 118±28, and 159 ±76 mg/dl respectively. After one month TC, LDL and TG levels were significantly reduced compared to baseline 156±28, 95±24, and 118±43 mg/dl respectively (p<0.005). At 12 months, patients lost 46±18% excess body weight, and there were 21(34%) patients with dyslipidemia. TC, LDL and TG remained stable through the end of the study compared to one-month levels. TC, LDL and TG levels were 155±37, 89±28, and 113±55 mg/dl respectively (p=NS for all variables). In contrast, at 12 months HDL levels (43±10, p<NS) were similar to baseline levels after an initial decrease at 1 month to 37±7.6 mg/dl (p<0.05). **Conclusions:** A rapid improvement of LP occurs within one month after DJBL placement, suggesting a weight-loss independent effect on lipid metabolism. DJBL successfully improves several parameters of the lipid profile for the duration of the placement up through one year.

0.037 Endoscopic Duodenal-Jejunal Bypass Liner Rapidly Improves Nonalcoholic Fatty Liver Disease Plasma Parameters

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Introduction: Bariatric surgery reduces obesity, type 2 diabetes, and nonalcoholic fatty liver disease (NAFLD). Recently, a non-surgical endoscopic device, the duodenal-jejunal bypass liner (DJBL), has been developed to mimic the bypass component of the Roux-en-Y gastric bypass in a minimally invasive way. Previous studies with this device have revealed improvement of obesity and type 2 diabetes. We investigated the effect of DJBL treatment on plasma parameters reflecting NAFLD.

Method: Seventeen subjects with obesity and type 2 diabetes were prospectively included in two medical centers. Subjects received the DJBL for 24 weeks. At baseline and at three and six months after implantation, plasma aspartate aminotransferase (AST), alanine aminotransferase (ALT), gamma-glutamyltransferase (-GT), albumin, caspase-cleaved cytokeatin-18 (CK-18), and liver fatty acid-binding protein (L-FABP) were determined.

Results: At baseline, patients had a BMI of $37.0 \pm 1.3 \text{ kg/m}^2$. AST, ALT, and -GT were elevated (AST: $35 \pm 4 \text{ IU/L}$, ALT: $54 \pm 5 \text{ IU/L}$, and -GT: $66 \pm 14 \text{ IU/L}$). Caspase-cleaved CK-18 and L-FABP concentrations were $214.4 \pm 35.6 \text{ U/L}$ and $29.3 \pm 2.6 \text{ ng/mL}$, respectively. Three months after DJBL treatment, BMI had decreased to $33.6 \pm 1.2 \text{ kg/m}^2$ ($p < 0.05$). Plasma levels of all NAFLD-related parameters had also decreased (AST: $28 \pm 3 \text{ IU/L}$, ALT: $32 \pm 2 \text{ IU/L}$, -GT: $44 \pm 7 \text{ IU/L}$, caspase-cleaved CK-18: $140.6 \pm 16.3 \text{ U/L}$, and L-FABP: $18.2 \pm 1.5 \text{ ng/mL}$, all $p < 0.05$). A further decrease of ALT and -GT was observed six months after implantation (ALT: $28 \pm 2 \text{ IU/L}$ and -GT: $35 \pm 5 \text{ IU/L}$, both $p < 0.05$). At that time, mean BMI had decreased to $32.9 \pm 1.2 \text{ kg/m}^2$ ($p < 0.05$). AST, caspase-cleaved CK-18, and L-FABP levels stabilized (AST: $23 \pm 2 \text{ IU/L}$, caspase-cleaved CK-18: $149.2 \pm 23.1 \text{ U/L}$, L-FABP: $20.2 \pm 1.6 \text{ ng/mL}$, all $p = \text{ns}$).

Conclusion: These data suggest that weight loss induced by proximal small intestinal exclusion through DJBL positively affects NAFLD.

0.038 Primary Obesity Surgery Endolumenal (POSE) Effects on Satiation, Gastric Emptying and Hunger/Satiation Peptides. Predictive Factors of Weight Loss After POSE in a Prospective Cohort of Obese Patients

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Introduction: Weight loss post-POSE (gastric fundus/body plication) may be due to reduced intake capacity from a reduction in gastric volume. However, decreased fundal accommodation might also accelerate emptying of nutrients to small bowel and thus, accelerate satiation. Neuro-endocrine-metabolic changes post-POSE might also impact satiation/weight loss.

Method: Patients were evaluated before, 2, and 6M post-POSE with solid gastric emptying scintigraphy (GE), validated intake capacity test (Kcals) and plasma glucose-homeostasis hormones/ GI peptides. Regression modeling assessed variables that influenced % excess weight loss (EWL). Models were selected based on higher R^2 with lowest degrees of freedom. Data reported in means (95% CI).

Results: HelveticaPOSE was performed on 18 patients (14F/4M). Age 39yrs (34; 44), BMI 36 Kg/m^2 (35, 37). %EWL post-POSE was 43% (36; 50%) and 55% (42; 68%) at 2&6M, respectively. Intake capacity decreased significantly from baseline at 2&6M post-POSE from (901Kcals [685; 1117]) to (473Kcals [345; 600]) and (574 [418; 730]), respectively. GE was delayed 2M post-POSE but returned to baseline at 6M. Glucose/Insulin ratio improved 2&6M post-POSE (all $p < 0.05$). Postprandial in Ghrelin was enhanced post-POSE compared to pre-POSE (21 [2; -40] vs. -59 [22; -95]; $p = 0.03$) as well as postprandial in PYY (6 [0; 13] vs. 14 [7; 20]; $p = 0.001$). Regression-modeling showed that gender ($p < 0,01$), weight ($p = 0,03$) and pre-POSE GE ($p < 0,01$) were independent predictors of %EWL at 6M ($R^2: 54\%$).

Conclusion: POSE is followed by significant weight loss, improved glucose-homeostasis and satiation-peptide responses. Weight loss post-POSE might be enhanced selecting subjects with slower pre-POSE gastric emptying.

0.039 Endolumenal Greater Curvature Plication a Case Series

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Introduction: Endoscopic endolumenal greater curvature plication (EGCP) uses the Overstitch device (Apollo Endosurgery, Inc., Austin, Texas) to reduce stomach size through approximation of tissues, mimicking a laparoscopic GCP. We report the first case series of EGCP in primary treatment of grade I obesity.

Methods: Four subjects with a BMI of 30–35 Kg/m^2 underwent EGCP in June 2012. Procedures were carried out under general anesthesia. The Overstitch™ is a suturing system mounted on a double-channel endoscope, designed to perform full thickness plications. Interrupted sutures are placed "infolding the greater curvature creating a tube-like path, reducing gastric volume.

Results: Patient characteristics are summarized in table 1. All were female; mean age was 25.5 years (22–52). Mean operative time was 96 min (50–190 min). No intraoperative complications were recorded. Patients stayed in the hospital overnight and diet followed bariatric protocol. All had pneumoperitoneum and light abdominal pain. Patient 2 presented nausea and vomiting, staying a full day in the hospital. After 6-month follow-up, weight loss is detailed in table 1. In a contrasted radiography, gastric lumen remains reduced, appearing similar to a sleeve gastrectomy (Fig. 1). All patients refer early satiety, one refers mild nausea after ingestion of large amounts of food; no complications were reported.

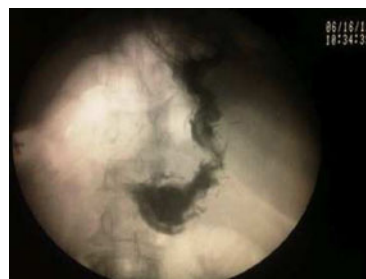


Fig. 1 Contrasted x-ray showing stomach with sleeve-like shape

Patient	Initial weight (Kg)	Initial BMI (Kg/m ²)	Final weight (Kg)	Weight loss (Kg)	% weight loss	Final BMI (Kg/m ²)
K.Z	89.1	32.0	69.5	19.6	22.47	24.7
V.T	89.0	32.0	75.0	14.0	15.73	26.9
J.S	86.9	32.4	69.1	17.8	20.48	26.0
L.C	95.0	35.0	85.0	10.0	10.53	32.4
Mean	90.0 Kg	32.85 Kg/m²	74.65 Kg	15.35 Kg	17.3%	27.5 Kg/m²

Table 1. Patient characteristics and weight loss results

Conclusion: EGCP is technically safe and feasible, with a low rate of mild adverse events. Pneumoperitoneum happened in all cases, showing that stitches reach full thickness of gastric wall. Mean weight loss was 15.35 Kg, mean final BMI was 27.5 Kg/m² and all subjects are satisfied with the results.

O.040 Laparoscopic Loop Duodenojejunostomy with Sleeve Gastrectomy (LDJB-SG): A Novel Bariatric Procedure for Morbid Obesity

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Introduction: Loop duodenojejunostomy with sleeve gastrectomy (LDJB-SG)/Proximal Duodenal Switch (PDS) is a novel bariatric procedure which has both restrictive and malabsorptive components. Here we reported the preliminary result of this surgery in morbid obesity.

Methods: A total of 16 morbidly obese patients (13 females and 3 males) underwent laparoscopic loop DJB-SG from October 2011 to February 2013. The data was collected prospectively and analysed retrospectively.

Results: The mean preoperative BMI was 34.9 (33.1–43.6). All patients had type II diabetes (T2DM) with a mean duration of 5.2 years (0.5–12 years). There was hypertension in 62.5%, hyperlipidemia and NASH in 68.8% of patients. The mean preoperative fasting sugar was 153.7 mg/dL, HbA1c was 8.16% and c-peptide was 3.08ng/dL. The mean operative time was 151 minutes (80–265 minutes). There were no intraoperative or postoperative complications. The percentage of excess weight loss at 1, 3, 6 and 12 months were 29.4%, 54.7%, 69.2% and 74.1% respectively. The mean BMI at 1, 3, 6 and 12 months was 31.4, 28.1, 25.9 and 25.4. The mean fasting sugar and HbA1c were 88 mg/dL and 5.93% at 1 year. There was partial and complete remission of diabetes in 100% and 66.7% of patients at 1 year. One patient developed incisional hernia at one year who was surgically repaired. There was no mortality.

Conclusions: In this preliminary report, LDJB-SG is proved to be an effective and safe procedure in morbidly obese patients with good remission of T2DM. Long term results are expected.

O.041 Current Status of Bariatric Surgery in Adolescents and Epidemiology of Obesity in Adolescents

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Introduction: Childhood obesity shows increasing prevalence becoming serious health, social and economic problem. There's variation of obesity prevalence among different age groups, sex and geographical regions. It is widely

accepted that bariatric surgery is the most effective treatment for morbidly obese patients, reducing mortality, improving/resolving co-morbidities, decreasing health-care utilization and costs.

Materials and methods: In half of European countries prevalence of EBW & obesity > 15% in 13 year boys and girls. Worldwide > 20% children have BMI > 85th percentile, and 10% of children have BMI > 97th age/ender adjusted percentile. In USA, 30% children born since 2000 will develop T2DM, about 50% out of all Hispanic and African American children will develop T2DM. Up to 77% of obese adolescents carry their obesity into adulthood.

Results: The most commonly accepted criteria for childhood bariatric treatment are, BMI > 40 (99.5th percentile for the respective age) and at least one co-morbidity; BMI > 50 with less serious comorbidities; Failure of nonsurgical treatments with at least 6–12 months of weight-reducing attempts in a specialized center; Patient shows skeletal and developmental maturity / attains 95% of adult height based on estimates from bone age. Is able to commit to comprehensive medical and psychological evaluation before and after surgery. Is willing to participate in a postoperative multidisciplinary treatment program;

Conclusion: More evidence and algorithm for bariatric surgery in adolescents is needed to evaluate outcomes, including influence on physical growth and QoL, international registry and definition of specialized childhood MDT centers is necessary.

O.042 Laparoscopic Sleeve Gastrectomy as a Treatment for Adolescent Obesity

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Introduction: Obesity has been identified as one of the most important public health concerns in both children and adolescents. Unfortunately, even the most comprehensive and aggressive multidisciplinary weight management programs have shown only modest weight loss results. There has been increasing enthusiasm for bariatric surgery for adolescent patients with morbid obesity.

Methods: Adolescent bariatric surgery data from 2009–2012 was collected included age, gender, race/ethnicity, height, weight, body mass index, and comorbid conditions. Postoperative data collected included the type of operation, length of stay, operative morbidity, the need for reoperation, and percent excess weight loss and body mass index at 3-month intervals.

Results: Twenty patients have undergone laparoscopic sleeve gastrectomy at our institution. Of these, 14 were female and 6 were male. The mean age was 17.3 ± 1.5 years of age. The mean preoperative weight was 149 ± 30 kg with a body mass index of 52 ± 9 kg/m² (2). There were no intraoperative complications. The mean length of stay was 1 day. The mean follow-up was 10.9 ± 7.4 months. The percent excess weight loss at 3 months, 6 months, and 1 year postoperatively was 25%, 40%, and 55%, respectively, in those who had reached these time points.

Conclusion: Laparoscopic sleeve gastrectomy is a safe operation for adolescent patients with morbid obesity and represents an effective early treatment strategy. Because of the minimal morbidity associated with laparoscopic sleeve gastrectomy, it may be the optimal non-device surgical option for this select group of adolescent patients.

O.043 The Efficacy of Laparoscopic Sleeve Gastrectomy in Adolescents

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) is becoming a more popular and preferred primary bariatric intervention. However, adolescent bariatric surgery is controversial, and the type(s) of bariatric surgery that are suitable for adolescents is under debate.

Our aim in this study is to measure the rate of weight loss in adolescents during certain intervals following LSG, and to assess its efficacy and outcome. **Method:** A retrospective of prospective maintained data was revised from 164 patients with ages between 12 and 21 who underwent LSG from 2008 to 2012 at Al-Amiri Hospital, Kuwait. The data included patients' age, gender, BMI, Date of operation, length of stay, percentage excess weight loss (EWL) and follow-up more than 2 years. (Data analysis-SPSS program)

Results: The total number of patients who underwent LSG and followed up from 2008–2012 is 135, 97 are female and 36 were males. The mean age is 18.9 ± 1.9 years. The mean preoperative weight is 130.6 kg with a BMI of 48.6 kg/m^2 . The mean follow up period is 20 ± 11.39 months. The median operative time was 85 minutes and hospital stay 3 days. There were no intra operative complications. One patient developed post-op complication.

The EWL at one year for male and female is 73% and 78% and for more than two years, 84% for male and 77% for female.

Conclusion: LSG is an effective and safe bariatric surgery in adolescents where it can significantly decrease excess body weight in a short period of time. Larger study with longer follow up is required to validate the results.

O.044 Is LSG an Option for Young Morbid Obese Patients?

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Background: Obesity prevalence is rapidly increasing among adolescents worldwide. Evidence is mounting that bariatric surgery is the only reliable method for substantial and sustainable weight loss; however, the debate continues with regard to the optimal surgical procedure for adolescents.

Methods: A retrospective review included all adolescents' patients (<20 years old) who underwent sleeve gastrectomy from 2005 to 2011 in CHRU Montpellier. Data collected included: age, sex, body mass index (BMI), intraoperative complications, and length of stay, operative morbidity and percentage of excess weight loss (% EWL) at 6 months, 1 year, and 2 years postoperatively.

Results: A total of 61 adolescent patients have undergone sleeve gastrectomy. Of these, 42 were female and 19 were male. The mean preoperative weight was 133 kg (range 90–204) with BMI of 47 (range 35–61). 15 patients (24.59%) were superobese (BMI > 50). All the procedures were performed by laparoscopy with no intraoperative complications. The mean hospital stay was 4.08 days. One patient (BMI-59) experienced a gastric leak, which necessitated reoperation by laparoscopy for drainage and endoscopic treatment. One other patient developed an hematoma treated by laparoscopic drainage. The % of EWL at 6 months, 1 year, and 2 years postoperatively was $43 \pm 13\%$, $77 \pm 31\%$, and $83 \pm 33\%$, respectively for a follow up of $88.4 \pm 65.3\%$, and respectively 57.69 %.

Conclusions: Laparoscopic sleeve gastrectomy may be advantageous for this age group though, since it requires neither foreign body placement nor life-long malabsorption. Laparoscopic sleeve gastrectomy represents an attractive bariatric procedure for adolescents' patients, more efficient than gastric banding and with less morbidity compared with gastric bypass.

O.045 Weight Outcomes and Quality of Life After Laparoscopic Sleeve Gastrectomy Among Indian Children and Adolescents – Results in 41 Obese Patients

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Introduction: RYGB remains the Gold Standard bariatric procedure in both adults and adolescents but most clinicians are reluctant to advice RYGB for obese adolescents because of permanent alteration in the stomach and its malabsorptive component may affect the growth and development. This is truer for Indian populations who have relatively low protein, vitamin and mineral levels than their western counterparts. LSG is more promising procedure for children/adolescents because it avoids intestinal bypass or implantation of foreign body (Banding).

Methods: A retrospective analysis of LSG performed at our centre from January 2009 through October 2012 was done. The percentage of Excess weight loss and Quality of life were analyzed.

Results: A total of 41 patients aged 10–21 years underwent LSG. The mean preoperative weight and body mass index was 118kg and 43.3 kg/m^2 respectively. The percentage of excess weight loss at 6 months, 1, 2 and 3 years were 50.1%, 82%, 85.2% and 91.1% respectively. At 6, 12, 24 & 36 months follow-up, 58.5% (n = 41), 95.1% (n = 41), 100% (n = 27) and 100% (n = 13) of patients achieved at least 50% EWL respectively. In the quality of life survey, 92.3% of patients reported very good or good quality of life after surgery.

Conclusion: In our experience, LSG is a safe and more physiological procedure, which can be used for achieving good weight loss among childhood/adolescent obese Indian patients.

O.046 Prevalence of Helicobacter Pylori and Chronic Gastritis in Morbidly Obese Pediatric and Adult Patients Undergoing Laparoscopic Sleeve Gastrectomy: A Comparative Study

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Introduction: The relatively high prevalence of chronic gastritis and *Helicobacter pylori* among morbidly obese adults undergoing bariatric surgery has been documented. However, no reports exist on the prevalence of *H. Pylori* infection or its association with outcomes of LSG and other bariatric procedures performed in children. We compared the prevalence of *H. Pylori* and chronic gastritis in morbidly obese pediatric patients who underwent LSG with a similar adult group.

Method: We performed a retrospective review of histopathology reports of stomach samples obtained from morbidly obese patients undergoing LSG between March 2008 and December 2013. Patients were divided between a pediatric group comprised of all patients aged 21 years (n=179), and an adult group that included all patients >21 years of age (n=163).

Results: *H. pylori* infection prevalence was similar in pediatric and adult patients, observed in 60 (33.5 %) pediatric and 55 (33.7%) adult specimens (P=.48). Chronic gastritis was significantly more prevalent in pediatric compared with adult patients, diagnosed in 168 (93.8%) pediatric and 109 (66.9%) adult specimens (P<.01).

Conclusion: Chronic gastritis prevalence was significantly higher in pediatric patients undergoing LSG compared with adults, while prevalence of *H. Pylori* infection was similar in both age groups. Further studies are warranted to evaluate the effect of chronic gastritis and *H. Pylori* on LSG outcomes, and to determine if LSG can eradicate *H. Pylori* infection in morbidly obese children.

O.047 Laparoscopic Sleeve Gastrectomy is in Superobese Adolescents with Diabetes Insipidus Following Hypophisectomy

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) is a popular operation in adolescents due to reduced need of long-term postoperative vitamin and mineral supplementation. This study reports two 17 year old patients who underwent LSG with preoperative weights of 298 and 180kg and BMI of 88 and 64 respectively. Both patients had Diabetes Insipidus (DI) following hypophysectomy for Craniopharyngioma.

Methods: Standard LSG over 32F bougie was performed. Operation time was 75 and 72 min respectively. There was no perioperative surgical morbidity.

Results: Both patients reported temporary loss of thirst after surgery with prolonged admission/readmission for hyponatremia due to dehydration. At 6 months, weight loss was 110 and 35 kg with BMI of 55 and 51. %EWL was 52 and 35. Weight was quickly regained after 6 months reaching the preoperative figure within 2 years.

Conclusion: Based upon our experience we do not recommend LSG in adolescents with DI following hypophysectomy for Craniopharyngioma due to temporary loss of thirst and dehydration and prompt weight regain due to hyperphagia.

O.048 Weight Loss After Laparoscopic Roux-en-Y Gastric Bypass in the Young Population is Maintained on the Long-term: Results of a Follow-up Study on 51 Operated Adolescents

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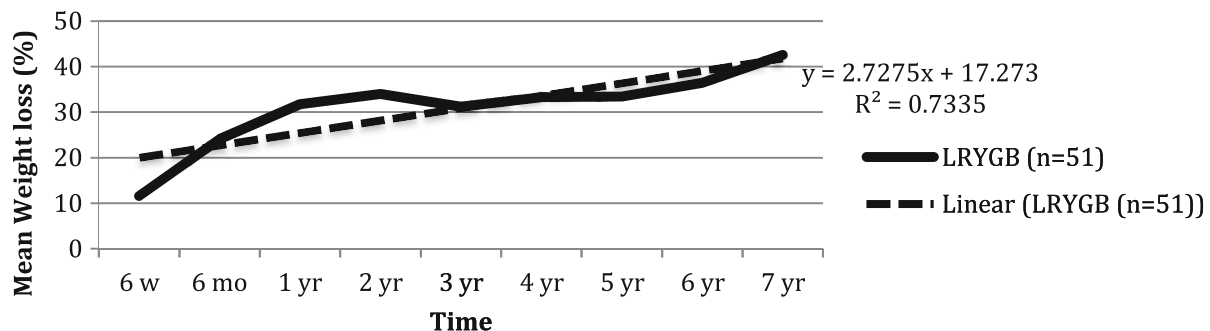
Introduction: Morbid obesity in adolescents is a growing major health concern. Reports on the long-term effects of bariatric surgery in this study group are scarce. Our objective was to evaluate the short- and long-term results of laparoscopic Roux-en-Y gastric bypass (LRYGB) regarding complications and weight loss in an adolescent subset of patients.

Method: We retrospectively analyzed all adolescents between the ages of 14 and 18 years that underwent LRYGB using a standardized technique by a single surgeon from 2005 to 2012. Complications and postsurgical weight loss at 6 weeks, 6 months, 1 year and annually afterwards were collected and expressed as percentage weight loss (%WL).

Results: Fifty-one adolescents underwent LRYGB with a mean age of 16.2 years and a mean BMI of 39.9 kg/m². There were no major immediate postoperative complications. Mean %WL was 11.56% (24/51), 24.11% (25/50) and 31.71% (21/43) at 6 weeks, 6 months and 1 year respectively. This trend was maintained at 5 years (33.41%; 11/23) and 7 years (42.55%; 2/4) postoperatively (graph1). In 7/35 patients (20%) a LRYGB related reintervention was necessary on the long-term, whereas 28/35 (80%) needed additional vitamin or iron substitution.

Conclusion: This retrospective study on adolescents illustrates similar long-term %WL after LRYGB compared to published series on the adult population. However, cautious follow-up of vitamin and mineral status remains imperative since the significant prevalence of deficiencies.

LRYGB in adolescents



O.049 Quality of Life in Adolescents Undergoing Laparoscopic Gastric Bypass

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Introduction: Morbid obesity has become a major cause of death and disability in adults in the United States and is having an important impact in the adolescent population. Data suggest a significant increase in the average weight of teens, accompanied by an increase in the number of obese patients. Although the long-term impact of morbid obesity in adolescents is unclear, they are developing diseases that are similar to those of adults. That's why doctors have begun using aggressive treatments, such as use of drugs and bariatric surgery. This study aims to provide the results and assess the quality of life of adolescent patients undergoing laparoscopic gastric bypass.

Method: The study includes all adolescents patients undergoing laparoscopic gastric bypass in our center from January 2003 to May 2008. All had surgery criteria according to the National Institute of Health and also had Inge criteria. All patients underwent a laparoscopic gastric bypass and passed the Gastrointestinal Quality of Life Index test (GIQLI), created in 1994 and modified into Spanish by Eypasch. All patients were recorded in a database. Data collection was retrospective, including hospital stay, early and late morbidity and weight changes during the first year.

Results: We operated a total of 32 adolescent patients, 26 women (81.25%) and 6 men (18.75%), with a mean age of 17 years (15–18). The average rating of GIQLI was 117.4. The value for digestive symptoms was 61.8 (8.1%), specific disease 36.0 (4.0%), social environment elements 15.7 (4.6%), physical elements 22.1 (5.7%) and social elements 13.7 (2.9%), with a mean follow-up of one year. Mean BMI at the time of surgery was 49.5 (SD 3.6) and 30.3 one year after surgery (SD 2.3).

Conclusion: Laparoscopic gastric bypass is a complex technique for the treatment of morbid obesity. The weight loss associated with bariatric surgery has been shown to decrease the comorbidities in adolescent patients. The GIQLI provides information on the quality of life in general and aspects of

upper and lower gastrointestinal tract. The bypass does not cause deterioration of gastrointestinal symptoms on the contrary, they improve. After surgery, patients undergoing laparoscopic gastric bypass acquire a quality of life closer to that of individuals without a history of obesity. Bariatric surgery seems a reasonable option for some adolescents with morbid obesity. There has been a 36% reduction in BMI a year of surgery. The quality of life of adolescents improves after laparoscopic gastric bypass.

O.050 Safety and Efficacy of Bariatric Surgery in Adolescents and Young Adults

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Background: To date, the only effective treatment to achieve sustained weight loss and reverse co morbidities in adults with morbid obesity is bariatric surgery. Of note, the effects of bariatric surgery are beyond the mechanical / absorptive aspects, and endocrine effects precede weight loss. While adolescents have specific implications that may shift the risk benefit ratio, the use of surgical weight loss therapy in this age group is increasing worldwide. The aim of this study was to determine the safety and efficacy of adolescent bariatric surgery.

Methods: Since January 2005, patients undergoing bariatric surgery in Germany are captured in a registry in the context of the ongoing “study for quality assurance in obesity surgeries”. Here, we conducted a descriptive analysis including all patients who were under the age of 22 years and had a primary surgical procedure from Jan 2005 to Dec 2010.

Results: A total of 345 procedures were recorded by 58 different hospitals. N=51 patients were under the age of 18 yrs. The most commonly applied surgical techniques were gastric banding (n=118, 34%), gastric bypass (n=116, 34%), and sleeve gastrectomy (n=78, 23%). Short-term complications are classified as intra-operative, general postoperative and specific postoperative. Rates of these complications were slightly lower in gastric banding (0.8%; 2.5%; 0.8%) compared to gastric bypass (2.6%; 5.2%; 1.7%) or sleeve gastrectomy (0%; 9.0%; 7.7%). Follow-up information is recorded for 48% (n=167) of patients, and the average duration of follow up was 544 days. In analogy to published findings, weight- and BMI reduction were lower in patients undergoing gastric banding (28kg; -9.5kg/m²) compared to patients undergoing gastric bypass (50kg; -16.4kg/m²) or sleeve gastrectomy (46kg; -15.4kg/m²). Among the patients with follow up (n=167), IDDM rates decreased from 3% to 1.8% (40% reduction), NIDDM rates decreased from 6.6% to 2.4% (64% reduction), hypertension rates decreased from 32.9 to 16.8% (49% reduction), and sleep apnea rates decreased from 7.2 % to 4.2% (42% reduction).

Conclusion: Like in adults, bariatric surgery in adolescents results in significant and sustained weight loss and resolution of co morbidities. However, the low follow up rates and missing long-term observations prohibit a final conclusion about endocrine sequel and long-term efficacy and safety of adolescent bariatric surgery. Clinical trials with structured surgical programs and mechanisms to ascertain patient adherence are needed to derive at a final conclusion.

This research was funded by the Federal Ministry for Education and Research (BMBF, 01GI1120A) and is integrated in the Competence Network Obesity (CNO).

O.051 Short-term Outcomes After Laparoscopic Roux-en-Y Gastric Bypass for Morbid Obesity

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Introduction: Laparoscopic Roux-en-Y gastric bypass (LRYGB) is considered the gold-standard procedure for the treatment of morbid obesity. It reduces weight and improves obesity-associated comorbidities (OAC). Our aim was to evaluate the short-term outcomes including complications, re-operations, weight loss and resolution of comorbidities after LRYGB in a bariatric unit in the UK.

Method: A retrospective analysis of a prospectively collected database was performed. The cases were consecutive primary LRYGBs performed between March 2010 and November 2011 by a single consultant. Patient demographics, operative time, conversion to open, complications, re-operations, death, weight loss, and resolution of OAC (diabetes, hypertension, obstructive sleep apnoea, hypercholesterolaemia, and joint pain) were analysed.

Results: Over the twenty month period, 113 patients underwent primary LRYGB with a mean follow-up of 17(12–32) months. There were 90 females and 23 males, with a mean age of 45(21–66) years. The mean BMI was 48(37.0–57.7)kg/m². The mean operating time was 173(114–257) minutes. There were no conversions to open surgery and no mortality. One(0.88%) patient underwent negative diagnostic laparoscopy. Two (1.7%) patients developed chest infections. Four (3.54%) patients required re-operation (laparoscopy) after discharge, three for internal hernia repair, and one for adhesional small bowel obstruction. The mean percentage excess weight loss was 70(28.1–112). At 12-month follow-up, 76.32%, 57.9%, 90.90%, 35.85%, & 75% of diabetes, hypertension, obstructive sleep apnoea, hypercholesterolaemia, and joint pain respectively, achieved improvement or resolution.

Conclusion: LRYGB is effective in achieving weight loss and improving comorbidities at a mean follow-up of 17 months, with minimal peri-operative complications and re-admissions. Our results are satisfactory and comparable to those reported elsewhere.

O.052 Characteristics of BMI24-34 Diabetic Patients Who Get Hundred Percent Cure After Tailored One Gastric Bypass Anastomosis

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Introduction: Considering the high costs of conservative lifetime type 2 Diabetes (DM2) its complications, and the severe impact on quality of life, metabolic surgery may become the most reasonable solution in many cases. The objective is to evaluate the clinical characteristics of patients who achieved 100% resolution of the metabolic diseases with tailored one anastomosis gastric bypass (BAGUA).

Methods: We analyzed 40 patients (14 BMI24-29 and 26 BMI30-34), 50% insulin independent, 68% male, 40 to 80 years old (mean 55). We assessed years of evolution of DM2 (1 to 30, mean 14). Preoperative fasting glucose ranged 84 and 302 (mean 180). Preoperative HbA1c 5.9 and 12% (mean 8.1). Fasting C-peptide 0.9 to 4.7 ng/ml (mean 2.5). 88% of patients had also a metabolic syndrome (MS) and 40% one or more complications of DM2. One patient had previous open abdominal surgery, and in two patients hiatal and umbilical hernia surgery was associated.

Results: All operated patients remain without treatment for DM2 and MS surgery. The operating time for primary surgery varied between 50 and 70 min (mean 60), 90 for patients with prior open surgery and 100 when associated surgery. Hospital stay was 48h in all cases. There was a reoperation for

bleeding 12h after surgery. All patients achieved HbA1c levels <7% at 6 months after surgery.

Conclusions: Tailored BAGUA surgery is safe and effective to fully solve both DM2 and MS even in patients with advanced disease and insulin-dependents if the pancreas still maintains a function within the normal ranges (C Peptide 0.8 to 4.0 ng/ml). No differences were found related to BMI.

O.053 Effects of Meal Delivery Route on Hormonal and Metabolic Profiles After Gastric Bypass

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Objective: The exact mechanisms behind GBP-induced diabetes resolution are unknown. We tested the differences in hormonal and metabolite profiles after different routes of meal delivery in GBP patients, with identical nutrient intake.

Methods: GBP-patients with a temporary gastrostomy were tested twice after a minimum of two hour fasting. In the first test they ingested a free volume of a liquid mixed meal (LMM). For the second test the same amount of LMM was given at the same rate through the gastrostomy. Sampling continued from 10 to + 120 minutes. This model allowed a simulation of the preoperative condition (gastrostomy) and comparison with the postoperative situation. Hormone samples were batch-analysed; metabolites were measured with gas chromatography/mass spectrometry.

Results: Subjects ingested a mean of 183 ml in 20 min. There was a major impact of the nutrient route on the hormonal response to a LMM, with the oro-jejunal meal yielding an increase in plasma insulin, GLP-1 and GIP plasma levels. These changes in hormone levels were accompanied by elevated levels of branched-chain amino acids (BCAA) and suppressed levels of fatty acids, both occurring within 20 minutes of LMM administration.

Conclusions: These data, comparing delivery routes of identical nutrients, demonstrate markedly elevated incretin and insulin responses when the meal is delivered oro-jejurally, providing a potential explanation for the rapid remission of T2D observed after GBP. The increase in BCAA suggests that this is a consequence of the hormonal response and questions the role of BCAA as a marker for insulin resistance.

O.054 Primary Hyperparathyroidism After Roux-en-Y Gastric Bypass: A Case Series

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Introduction: Primary hyperparathyroidism (PHPT) in the setting of previous roux-en-Y gastric bypass (RYGBP) is not well described. The diagnosis can be difficult, as secondary hyperparathyroidism (SHPT) commonly occurs in patients after RYGBP due to calcium malabsorption and vitamin-D deficiency. The rate of single adenomatous parathyroid disease in this population is unknown.

Methods: All patients from 2000–2012 who underwent cervical exploration for diagnosis of primary hyperparathyroidism with history of preceding RYGB were analyzed retrospectively for presenting characteristics, intraoperative findings, and postoperative outcomes.

Results: Ten patients were identified: average age was 58.4 years and all were female. Time interval between RYGBP and cervical exploration was 68 months with average follow up of 29 months. Average pre-operative calcium was 10.8mg/dL, PTH 155pg/mL, 25-vitamin-D 32ng/mL. 80% of patients

presented with symptoms. 20% with nephrolithiasis. 60% had evidence of bone loss (osteopenia=3, osteoporosis=3). 90% underwent pre-operative imaging. 50% underwent focused parathyroidectomy, and 50% 4-gland exploration. 80% of patients had a single adenoma with two patients having 4-gland hyperplasia. Five patients had true-positive pre-operative localization of an adenoma. Intraoperative PTH was used in seven patients and confirmed cure in all. Of the nine patients with greater than six-month follow-up none had evidence of persistent or recurrent PHPT. Six-month calcium was 9.4mg/dL, PTH 74pg/mL, 25-vitamin-D 40ng/mL. Two patients had evidence of persistently elevated PTH despite normalization of calcium.

Conclusions: Following RYGBP, patients may be diagnosed with PHPT. Single adenomatous parathyroid disease may be the underlying cause when SHPT has been excluded and the biochemical diagnosis is secure.

O.055 The Clinical Effect of Laparoscopic Sleeve Gastrectomy on Type 2 Diabetes in Japanese

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Background and Aims: Clinical effect of gastrointestinal bypass procedures (e.g. LRYGB, BPD±DS, LSG-DJB) on type 2 diabetes has been known to be very high. Meanwhile, laparoscopic sleeve gastrectomy (LSG), mainly due to its simplicity, has gained popularity as a standalone bariatric procedure. The clinical effect of LSG on diabetes has been suggested to be better than that of purely restrictive procedure (e.g. LAGB). Thus, to understand what LSG can and cannot do for diabetes is of highly importance in order to avoid possible overtreatment.

Patients: From July 2006 to November 2012, 162 morbidly obese Japanese patients underwent LSG (M: F=78:84, mean age 40 years old, mean pre-OP BW 123.2 kg, mean pre-OP BMI 44.6 kg/m²) in our hospital. Among them, 51 patients were associated with diabetes preoperatively. 40 out of the 51 patients (diet controlled diabetes: 18, treated with oral agent: 20, insulin user: 2) were followed up at least 1 year after surgery and were evaluated their change in glycemic status during the period.

Results: At 1 year after surgery, their mean BW was 95.6 kg and their mean BMI was 34.3 kg/m² which accounted for their mean %EWL was 56.0%. When diabetes remission is defined as fasting glucose < 126 mg/dL and HbA1c < 6.5%, 37 out of the 40 patients (92.5%) achieved diabetes remission at 1 year after surgery. Both two insulin users did not achieve diabetes remission. Remission group (n=37) and non-remission group (n=3) were statistically different in terms of diabetes duration (3.2 vs 19.7 yrs) and pre-OP c-peptide level (4.2 vs 2.4 ng/mL).

Conclusion: Although interpretation of the data should be careful due to the possible patient selection bias, our results of LSG on glycemic control was generally excellent. The effect seems to be limited for insulin users, those with low pre-OP c-peptide level and with longstanding diabetes. Larger number of patients with longer follow-up is required to draw a definitive conclusion.

O.056 Influence of Laparoscopic Sleeve Gastrectomy on Weight Loss and Parameters of Metabolic Syndrome – A Retrospective Analysis

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Introduction: 214 serial patients who underwent Laparoscopic Sleeve Gastrectomy (LSG), between January 2010 and January 2012 were analysed for adequacy of weightloss and resolution of parameters of metabolic syndrome.

Methods: All patients included had a BMI between 35 and 55. Inclusion criteria as regards age was between 20 and 65. Evaluations as regards comorbidities were done at 1 year and half yearly thereafter. HbA1C levels of 6 or less was considered as criteria for resolution of Diabetes. All patients who required less medication /came off insulin were considered to be into remission. Patients who came off medication were considered cured of Hypertension. Those requiring less dosage of medication were considered in remission. A total cholesterol level over 200mg /dl was considered as criteria for Dyslipidemia. Those on review with values less than 150mg/dl were considered in remission. A weight loss of over 70% of excess weight was considered 'excellent', between 50 -70% considered 'adequate' and rest 'inadequate'

Results: 77 patients had excellent and 118 patients adequate weight loss. 19 had inadequate weight loss. 48 of the 98 diabetics went into remission, 33 required less medication and the rest remained stable. 98 of the 104 patients who were hypertensive came off medication / required less drugs. Dyslipidemia failed to regress in 68 of the total 101.

Conclusion: LSG is excellent tool in achieving weight loss and bringing Diabetes and Hypertension under remission. Role in management of Dyslipidemia seems inadequate.

O.057 5-Year Results of Gastric Bypass and Sleeve Gastrectomy in Morbidly Obese Patients with Type 2 Diabetes

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Introduction: The benefits of bariatric surgery on type 2 diabetes (T2DM) and metabolic syndrome in morbidly obese have been widely described. While many mechanisms have been described, the effects of each of the different techniques have not been clearly evaluated. We describe the effect of gastric bypass (RYGB) and sleeve gastrectomy (SG) in our series.

Materials and Methods: Retrospective study of the prospective database of bariatric surgery. Included morbidly obese patients with T2DM diagnosed at the time of surgery that involved RYGB and SG. The study included patients with at least 2 years of follow up. We evaluated the following variables: weight, basal glucose, glycosylated hemoglobin (HbA1c) and diabetes treatment need.

Results: It includes a total of 86 patients, 58 in the RYGB group and 28 SG. The initial BMI was 46.71kg/m² and 57.63kg/m² respectively. Fasting glycemia was 10.71 mmol/L and 8.05 mmol/L, and HbA1c .16% and 7.32% respectively. Before surgery the RYGB group 10.3% and 14.3% SG group needed insulin. BMI loss at 1, 3 and 5 years was 0.74% vs 61.19%, 60.05% vs. 54.11% and 52.37% vs 61.45% without significant differences except at year 1 (p = 0.009).

Both fasting glycemia and HbA1c did not show any statistical difference at the points of analysis, but were lower in the RYGB group. According to the ADA criteria, 42% of RYGB and of 39% SG group can be considered as resolved at 5 years follow-up (p = ns).

Conclusions: These results described scarce observed differences in weight loss and metabolic control of diabetes between both groups, although they are slightly better in the RYGB group.

O.058 Baseline Patient Profiling and Three Year Outcome Data After Metabolic Surgery in a SA Centre of Excellence

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Introduction: Metabolic team performed 910 consecutive surgeries with meticulous database keeping. Patient profiling provided authors with unique insight into patients entering into surgery, as well as to their three year outcome data.

Methods: Data entered, stored in a blinded manner; in accordance with Helsinki Declaration 1961. Data collected by single preparatory team. Analysed with XLSTAT programme 2011, using Student's t-test and % prevalence of variables calculated on total n-number of particular variables.

Results: Contributing history includes childhood obesity (75%); family history (93%); gestational weight gain (42%); pharmacotherapy (78%). Mean duration of attempts at weight loss 17.3y. Associated depression present in 25% and anxiety present in more F (14.2%) than M (6.7%). Major comorbidities: hyperuricaemia (47%); diabetes (46%); dyslipidaemia (63%); hypertension (62%); NASH/NAFLD (85%); sleep apnoea (45%); IHD (13%). M patients are more frequently deemed anaesthetic risk (14% vs 7.9%). M patients have worse overall baseline profile. Infertility presents in 14% F and PCOS in 19%. At three years complete remission of DM obtained in 88.5% and part remission in 12.5% of patients. Complete remission for HT 83%; hyperlipidaemia 80%; sleep apnoea 85%; OA 58%. Food tolerance good at 3y with 21.1% of patients dumping. One medical mortality occurred at 30 days. Minor medical morbidity 2.6%, major medical morbidity 5.6%. Surgical mortality 0%

Conclusions: Extensive database keeping by large and holistic team can provide information over and above that provided by the surgeon alone.

O.059 Morbide Obesity and Cancer- An Update

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Introduction: Obesity is a risk factor in developing oesophagus-, colonic-, pancreatic-, renal-, breast- and uterine malignancies and non-hodgkin lymphoma with an increasing risk of BMI higher than 30 according to the WHO-IARC (Int. Agency for Research on Cancer). In Austria a large cohort study over 145.000 adults (1) during a period of 16 years classified 13% of colonic cancer in male in 26% of uterine cancer in female patients caused by obesity. **Method:** A retrospective study over a period of 14 years (1999–2012) analyzed 611 patients undergone various procedures in obesity surgery on their cancer risk and the questions if bariatric surgery is a contraindication in malignancies or not.

Results: Only 4 patients of the 611 (0,65 %; 3 women and one man) developed cancer after bariatric surgery: one lung-, one breast-, one pancreatic- and one testicular cancer.

Conclusion: The risk of developing cancer disease after bariatric surgery is in our study less than 1 %. Cancer of the excluded-stomach or at the oesophageal-gastric junction did not occur and is also very rare in the literature. (2, 3)

O.060 Evaluation of the Use of Single Incision Laparoscopic Surgery (SILS) in Bariatric Surgery

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Introduction: Single-incision laparoscopic surgery (SILS) has the potential advantages of reduced postoperative pain and reduced port-site complications. In this article, we present our first experiences with SILS gastric banding

(LGB) and laparoscopic sleeve gastrectomy (LSG) in the UAE in comparison to the international results.

Methods: Since May 2009, 73 carefully selected patients (Average body mass index 41.2, between 38.5 and 47.5kg/m (2) with peripheral obesity) underwent LGB in 18 patients and LSG in 55 patients using this single incision technique. The same surgeon performed all surgical interventions. For all patients, the same perioperative protocol and operative techniques were implemented.

Results: Three LGB and one LSG were converted to standard laparoscopy. Three LSG needed additional 5 mm port. Mean operative time was 110 (95–165) minutes for LGB and 180 (70–350) minutes for LSG. The mean postoperative pain score was 06/10. 2 patients were totally pain free, 6 hours after LGB. There were no postoperative complications after LGB. After LSG, there were two wound healing problems, two intraabdominal bleedings and three leaks from the stapler line at the level of oesophageo-gastric junction. All patients were very pleased with the cosmetic outcome.

Conclusion: Single incision laparoscopic surgery is feasible, allowing for scarless abdominal operations. This early experience suggests that outcomes are comparable to standard laparoscopic surgery but with improved cosmesis, however, long term results are awaited to confirm these findings. A new learning curve to reduce the timing of operation and the rate of postoperative complications is needed even for those surgeons who are performing advanced minimal access surgical procedures.

0.061 Single-incision Laparoscopic Bariatric Surgery. Is There Enough Evidence to Decide?

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Introduction: Single-incision laparoscopic surgery has sparked a great deal of interest in the surgical community in recent years including bariatric surgery. However, we still do not definitively know if this type of surgical approach provides benefits to the patient over conventional techniques without worsening certain important aspects such as the incidence and type of complications. The aim of this study was to evaluate the safety and efficacy of single-incision laparoscopic bariatric surgery (SILBS) when compared to conventional laparoscopic bariatric surgery (CLBS).

Methods: We reviewed six databases: Embase, PubMed, Medline, ISI web of Knowledge, Scopus, and Cochrane Central Register of Controlled Trials. Cohorts and randomized clinical trials that compare SILBS to CLBS were included. This systematic review was performed in accordance with the PRISMA recommendations.

Results: A total of 14 studies complied with the inclusion criteria for our analysis, which included a total of 2357 patients, 1179 in the SILBS group and 1178 in the CLBS group. The duration of the surgical procedure was longer in the SILBS group and no major intraoperative complications were observed in these series. Postoperative pain showed a small improvement in the SILBS group. The overall morbidity rate was 5% in the SILBS group and 4.8% in the CLBS. Only in one study in the AGB group perioperative mortality was observed (1/739; 0.14%). Percentage excess weight loss and resolution of comorbidities were comparable between groups. When cosmesis was evaluated with SILBS were more satisfied with the scar outcome.

Conclusions: Single-incision laparoscopic bariatric surgery is a feasible technique to use in selected patients. However, there is insufficient evidence to recommend its widespread use compared to conventional approach. More studies are needed following the initial period of implementation and learning curve to analyze the safety of this technique and its possible benefits.

0.062 Case-matched Comparative Study of Single Incision Transumbilical with 5-ports Laparoscopic Sleeve Gastrectomy

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Background: Laparoscopic sleeve gastrectomy (LSG) is gaining large popularity as a stand-alone bariatric procedure. Using single port or single-incision transumbilical (SITU) laparoscopic approach are still not widely reported till now. In this study, we reported results of our case-matched comparative study between SITU and 5-ports sleeve gastrectomy.

Methods: Between November 2008 and November 2012, 51 morbidly obese patients underwent SITU-LSG. After matching age, sex, BMI, we compared the weight loss, remission of disease, surgical complications and satisfaction with 5-ports LSG. Data was prospectively collected and retrospectively analyzed.

Results: 13 male and 38 female with mean age was 31 years old (range, 18–50) are enrolled in both groups. Mean preoperative body mass index (BMI) was 36 kg/m² (range, 32–45). The procedure was successfully performed in all SITU patients without inserting additional trocars or conversion to conventional 5 ports or open surgery. The mean operative time and hospitalization are similar in both groups. And during 2 years of follow up, no mortality, leak, stricture, wound infection and incisional hernia were observed in these patients. The excess weight loss (EWL %) at 1 year was 73.8% and 79.5% in SITU and 5-ports group individually without difference. And EWL at 2 year is also similar (76%). Most comorbidities resolute 2 years after surgery in both group without difference. Patients were more satisfied with the SITU cosmetic results.

Conclusions: The study showed similar and excellent surgical results in both methods, but SITU carry better cosmetic and satisfaction outcome.

0.063 Simplified Method of Single Incision Sleeve Gastrectomy and Gastric Bypass

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Introduction: Laparoscopic sleeve has been traditionally performed through multiple 4–6 trockars with a lateral access of staplers. We modified the technique by placing only three trockars in regular central triangle pattern with a stapler introduced centrally, through a trockar placed at the umbilicus.

Material: 15 laparoscopic sleeve gastrectomies were successfully performed with mean time of 76 mins (45–80 mins); mean BMI 47 (37–55). Majority were females (12:3); age 33–62. Patients were followed in regular visits postoperatively for 3–5 months. Control group of 15 patients who underwent 6 trockars traditional laparoscopic sleeve gastrectomy were matched with similar BMI, age and body habitus (central obesity). Postoperative outcomes were measured and compared: pain, early ambulation, weight loss, and cosmesis.

Results: No intraoperative and postoperative complications we noted. 5-8% of patients had postoperative nausea in both groups, managed medically. Patients from a study group experienced significantly less postoperative pain as measured by usage of narcotic medications. Cosmetic satisfaction was higher in this group.

Conclusion: We have found that sleeve gastrectomy can be effectively performed through a reduced number of trockars in carefully selected group of patients with lower BMI, resulting with the same weight loss and no complication, with benefits of less pain and better cosmesis. Access to resected stomach through centrally placed trockars seems to be easier than lateral.

O.064 Single-incision Sleeve Gastrectomy Versus Conventional Laparoscopic Sleeve Gastrectomy. A 3 Year Study

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Background: In the chronology of surgery, single incision surgery is one of the most spectacular innovations in the recent years. This is a retrospective study done to evaluate the outcomes and complication rates of the single incision sleeve gastrectomy versus the conventional 5 port laparoscopic sleeve gastrectomy at the end of 3 years.

Methods: A retrospective comparative analysis was done of 220 patients in each arm who underwent laparoscopic sleeve gastrectomy and single incision sleeve gastrectomy from September 2009 until September 2011. Both groups were matched for age, gender and BMI and they were then randomly assigned to either group. Postoperative pain scoring was done using the visual analogue scale. Bariatric cosmesis score was filled by all patients postoperatively. Postoperative outcomes in terms of, excess weight loss, resolution of comorbidities and complication rates were compared in both groups, at the end of 1, 2 and 3 years.

Results: Operating time and intraoperative blood loss was comparable in both groups. VAS scoring revealed less postoperative pain at 24 hours in the single incision group as compared to the laparoscopy patients- $P < 0.0001$. Cosmetic outcome was better in the single incision group.

Excess weight loss and resolution of co morbidities were comparable in both groups at the end of 3 years. Complication rate was less than 1% in both groups.

Conclusions: In selected cases and after due experience, single-incision sleeve gastrectomy is as safe, feasible and as effective a procedure as the conventional laparoscopic sleeve gastrectomy and should be practiced with regularity.

O.065 Transumbilical Sleeve Gastrectomy with Simultaneous Cholecistectomy

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Introduction: The single and reduced port transumbilical approach has been applied in cholecystectomy and bariatric surgery. However, there are no reports of both procedures performed simultaneously. The aim of this study is to establish the technical feasibility and show the surgical results of sleeve gastrectomy with simultaneous cholecystectomy using transumbilical approach.

Method: 20 women diagnosed with obesity and cholelithiasis underwent sleeve gastrectomy and simultaneous cholecystectomy with transumbilical approach. The average age and BMI was 39.8 ± 9.9 years and 34.8 ± 4 kg/m², respectively. The procedure starts with transumbilical incision and GelPoint device insertion. A 5mm lateral left assistance trocar is inserted. Greater curvature is dissected with Enseal through assistance trocar. Sleeve gastrectomy is performed with staplers, calibrated with a 36fr orogastric tube. Vesicular hilum is exposed with two clamps through GelPoint device and the Calot's triangle dissected with hook through the assistance trocar. Clips are placed in the cystic duct and artery, through Gelpoint; and then transected with scissors through the assistance trocar. Vesicular dissection is performed with hook through the assistance trocar. Both pieces are removed along with GelPoint device.

Results: Mean operative time was 70.3 ± 12.3 min. Mean hospital stay was 2.05 ± 0.22 days. One patient was readmitted with an intraabdominal abscess, treated with exploratory laparoscopy; not being able to demonstrate a leak. There was no mortality. The cosmetic result was satisfactory in all patients.

Conclusion: Sleeve gastrectomy and cholecystectomy are procedures feasible and safe to perform simultaneously by transumbilical approach with the exposed technique.

O.066 Minimally Invasive Sleeve Gastrectomy with Spider System: A Review of 50 Cases

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Introduction: This single surgeon series is an evaluation of the novel SPIDER Surgical System for transumbilical sleeve gastrectomy for morbid obesity. This method offers patients a reduced incision approach to the standard laparoscopic procedure.

Method: The SPIDER Surgical Device is a four channel; 18mm system that employs flexible, catheter based instruments with articulation and also allows for rigid instruments such as a laparoscope. The system is inserted under visualization and insufflation into the umbilicus, and 12 mm trocar is inserted periumbilical. Flexible graspers are used to then manipulate tissue, and a vesse54l sealer and bariatric length articulated stapler are inserted next to the SPIDER device for gastrolysis and to perform the sleeve gastrectomy in the usual fashion.

Results: 50 sleeve gastrectomies have been completed with the SPIDER device. The mean total operative time was 108 minutes (standard deviation 35 minutes). The mean BMI was 43 with a max BMI of 54. In 14 cases (28%), a hiatal hernia was deemed present and repaired. In 5 cases, a cholecystectomy was performed concurrently with the sleeve gastrectomy. No perioperative complications or leaks were experienced.

Conclusion: The use of this technology did not increase OR times to an unacceptable level, and did not appear to raise perioperative risks in our experience. The system is a feasible technology for reduced incision sleeve gastrectomy, though further study is needed.

O.067 275 Single Incision Laparoscopic Gastric Bands: What Have We Learnt?

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Introduction: Single incision surgery in the morbidly obese patient has not been widely adopted, but remains a popular choice amongst patients. It does present its own surgical challenges with hepatomegaly and increased abdominal adiposity. Here we present our experience of 275 single incision laparoscopic gastric bands.

Methods: Between June 2009 and August 2013, 275 obese patients underwent single incision laparoscopic adjustable gastric banding through a single transverse incision using a multichannel single port and via a pars flaccida technique. Prospective data collection was undertaken including operating time, additional ports and additional procedures undertaken.

Results: In this series, median operative time was 60 (range 34–170) minutes. An additional port was placed in 14 patients (5%), with one conversion to 5-port technique (0.4%). Of these patients (n=15) the majority were male ($p < 0.05$). Reasons for additional port placement included repair of hiatus hernia and difficult anatomy. Additional port placement occurred more often within the first 100 cases (8/15, 53%). BMI was not a predictive factor of additional port placement. There were no mortality and minimal morbidity with 2 wound infections resulting in band removal.

Conclusion: Single incision laparoscopic adjustable gastric banding can be performed safely with minimal morbidity and mortality in the morbidly obese patient and our technique has a high rate of success. Following 275 single incision band insertions, additional port placements were more commonly required in male patients, and earlier in the learning curve.

O.068 Initial Experience of Robotic Bariatric Surgery with Low Co2 Pneumoperitoneum Pressure

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Traditionally bariatric surgery has been performed across the globe with conventional laparoscopy and it is an accepted fact that large amounts Carbon dioxide(CO₂) gas is insufflated at high pressures to have an abdominal tent adequate for the space required to perform these procedures. The sheer weight of the anterior abdominal wall is overwhelming and can sometimes deem the need for two pneumo- insufflator machines for a procedure. We have started the use of the da Vinci Si robotic system for bariatric surgery at our institution since Jan 2013 and found that the lap lift provided by the robotic arms on the anterior abdominal wall can be used to our advantage, with regards the pressure, flow rates and absorption of CO₂ in the body of the patient. The robotic cases done were at a lower flow rate as well as intra-abdominal pressure from the insufflator through the entire case and hence the amount of gas flow also was lesser, a retrospective comparison of 5 cases done with each method, i.e. conventional laparoscopic and robotic surgery were studied and the data with regards the EtCO₂, rise in intra gastric pH in the two arms are significant. These results need to be analyzed in a randomized controlled trial for more conclusive evidence to prove that robotic bariatric surgery especially in super obese category of patients(BMI >50) is less morbid for the patient and can help in early recovery than conventional laparoscopy.

O.069 A New Antireflux Technique Associated to Sleeve Gastrectomy. Strachan Technique

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Background: The sleeve gastrectomy has become one of the most frequent techniques in the treatment of obesity. The risk of fistula and its management is one of the most feared complication The high rate of gastroesophageal reflux and hiatal hernia lead many surgeons to prefer the gastric-bypass.

Material and Methods: Our descriptive study included 250 patients The technique was performed in all of them The patients were selected base on the standards' criteria for bariatric surgery

Objectives:

- Understand the criteria used for selection.
- Evaluate the distribution by age, sex and body mass index.
- Identify the complications and their management
- Evaluate the effectiveness of the procedure

Procedure: Our technique starts with a thorough and systematic dissection of the esophageal hiatus and gastric fundus. The sleeve is created by resecting the greater curvature of the stomach using endoscopic gastrointestinal mechanical stapler ECHELON – FLEX 60 starting 4 cm from the pylorus over a 36 Fr bougie. This is follow by reinforcement of the staple line with a running suture The proximal 3 to 4 cm are sutured to the right side of the esophageal hiatus. In patients with esophagitis and hiatal hernia the technique is complemented with hiatoplasty.

Results: In our cohort 2500 patients underwent the procedure from November 2010 to December 2012. One hundred and sixty patients were female and 90 male. The mean age was 37 years old and BMI of 41. Gastroduodenal barium series were performed preoperatively, one month and three months after surgery. The episodes of reflux were resolved or improved in all patients. No hiatal hernia was reported. One patient developed suture line leak.

Conclusion: We believe our modification to the sleeve gastrectomy is an acceptable option to improve its outcome by reducing its postoperative complications and incidence of gastroesophageal reflux.

O.070 Vagus Nerve Stimulation Increases Energy Expenditure in Relation to Brown Adipose Tissue Activity; Possible Options for Obesity Therapy

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Introduction: Human brown adipose tissue (BAT) activity is inversely related to obesity and positively related to energy expenditure. BAT is highly innervated and it is suggested the vagus nerve mediates peripheral signals to the central nervous system, there connecting to sympathetic nerves that innervate BAT. Vagus nerve stimulation (VNS) is used for refractory epilepsy, but is also reported to generate weight loss. We hypothesize VNS increases energy expenditure by stimulating BAT activity.

Methods: Fifteen patients with stable VNS therapy (age: 45±10yrs; body-mass-index; 25.2±3.5 kg/m²) were included. Ten subjects were measured twice, once with active and once with inactivated VNS. Five other subjects were measured twice, once with active VNS at room temperature and once with active VNS under cold exposure in order to determine maximal cold-induced BAT activity. BAT activity was assessed by 18-Fluoro-Deoxy-Glucose-Positron-Emission-Tomography-and-Computed-Tomography.

Results: Basal metabolic rate (BMR) was significantly higher when VNS was turned on (mean change; +2.2%). Mean BAT activity was not significantly different between active VNS and inactive VNS (BAT SUV^{Mean}; 0.55±0.25 versus 0.67±0.46, P=0.619). However, the change in energy expenditure upon VNS intervention (On-Off) was significantly correlated to the change in BAT activity (r=0.935, P<0.001).

Conclusions: Activated VNS significantly increased energy expenditure. The observed change in energy expenditure was significantly related to the change in BAT activity. This suggests that the VNS-induced increase energy expenditure in humans is at least partly due to BAT activation. Chronic VNS might have a beneficial effect on the energy balance and play an important role in weight management.

O.071 Is Re-implantation of the Duodenal-Jejunal Bypass Liner Feasible?

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Introduction: The duodenal-jejunal bypass liner (DJBL) is a 60 cm impermeable fluoropolymer device designed to induce weight loss and treat Type 2 Diabetes

Mellitus (T2DM). The endoscopically implanted DJBL prevents food to contact with the proximal intestine which results in weight loss and better glucose control. The objective of this study is to evaluate the feasibility, safety and effectiveness of the DJBL after re-implantation.

Method: Five patients with T2DM and BMIs ranging from 30–35 kg/m² who completed 18 months follow-up after their first DJBL implantation of six months, were selected for re-implantation. Weight loss, excess weight loss, HbA1c and T2DM medication were analysed before the first implantation, during follow-up after the first explantation, and six months after re-implantation.

Results: All five patients underwent re-implantation of the DJBL without complications. Median body weight decreased from 109 (92–116) kg at baseline to 103.8 (80–115) kg at explantation and 98 (78–113) kg at 6 months after re-implantation. Excess weight loss increased from 23 (3–76) % at explantation to 40 (9–85) % at 6 months after re-implantation. Serum level HbA1c remained stable (65 vs 67 mmol/mol) despite lowering of T2DM medication.

Conclusions: Re-implantation of DJBL is feasible and safe. Moreover, additional weight loss and better glucose control with less use of anti-diabetic medication was shown after re-implantation compared with the first implantation.

O.072 Bariatric Surgery Outcomes in a European Center of Excellence. How to Do?

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Background: Bariatric Surgery Centres of Excellence (CoE) in Europe have been promoted by the IFSO-EC (European Chapter) since 2009 to give better outcomes and security to patients in bariatric surgery. We retrospectively analyse our results and historical unit evolution to deserve to be included in the IFSO-EC CoE program.

Methods: A retrospective analyse of our prospective database has been performed. Demographic data, comorbidities, type of surgical procedure, length of stay, complications and reoperation rate, mortality and follow up with excess weight loss percentage (EWL%), Body Mass Index loss percentage (BMIL%) and comorbidities resolution were analysed according to four consecutive periods.

Results: Between May 2001 and September 2012 we operated 690 patients, first with open gastric by-pass (OGBP period 2001–2005), beginning with laparoscopy (Early Laparoscopic period ELp 2006–2009), introducing robotics (Late Laparoscopic and Robotic period LL-Rp 2010.2011) and finally Center of Excellence period (CoEp 2012). The complications rate was 18.9% in the first period and drop to 3% in the last. We reoperated 9% patients in two early periods and none in the last. Mortality rate was 2%, 0,85%, 0,47% and 0% in the four periods. The hospital stay drop from 6 to 3 days. With a follow-up of 80% at 2 years EWL% and BMIL% was about 80% in the by-pass techniques and 70% in the sleeve techniques, with differences between periods. The resolution of comorbidities was about 90% in DM type2, 80% in HTA and 85% in OSAS with CPAP.

Conclusions: The strengths of this study include the importance for teams that are just at the beginning of their experience in bariatric surgery in order to avoid complications and deal with better long term results. A clinical pathway, technical skills, learning curve, patient's volume are mandatory to become a Center of Excellence.

O.073 Early Outcomes of Bariatric Surgery in Singapore of a Multi-ethnic Asian Cohort

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Introduction: Singapore is a multi-ethnic country in Asia and the differences in outcomes of bariatric surgery among the various ethnic groups have not been well reported.

Methods: Prospectively collected data of 102 operated between January 2009 and December 2012 at National University Hospital, Singapore were reviewed. Laparoscopic sleeve gastrectomy was performed in 80 patients (78.4%) & Roux-en Y gastric bypass in 22 patients (21.6%). The cohort consists of Chinese 36.2 % (n=37), Malays 34.3 % (n=35) and Indians 29.4% (n=30) respectively.

Results: The mean pre-operative BMI were, Chinese (41.7±6), Malays (44.1±8) and Indians (40.8±5) kg/m². Hypertension and obstructive sleep apnea was noted to be more prevalent in Chinese, dyslipidaemia and type II diabetes mellitus (T2DM) in Malays and osteoarthritis in Indians.

The mean % of excess weight loss (%EWL) at 1 year among the 3 different ethnic groups was 73.6% (Chinese), 71.9% (Malays) and 64.7% (Indians). At one year, irrespective of ethnicity lipid profile showed improvement in triglycerides (0.53mmol/l, p<0.05), HDL (0.24mmol/l, p=0.004) and Total cholesterol: HDL ratio (0.97mmol/l, p=0.016). The mean pre-operative HbA1c among T2DM patients were, Malays (8.6±2.3), Chinese (7.4±0.7) and Indians (8.3±0.6). At 1 year post surgery, Malays (HbA1c-5.8±1.2, p<0.05) and Indians (HbA1c-5.2±0.1, p=0.015), achieved a statistically significant improvement of HbA1c in comparison to the Chinese (HbA1c-5.9±1.0, p=0.113). The mean change in HbA1c at 1 year and T2DM remission rates between the 3 different ethnic groups didn't different.

Conclusion: Bariatric surgery was equally effective in terms of weight loss, diabetes remission and improvement in lipid profile in all three ethnic groups in Singapore.

O.074 Frequently Asked Questions of Potential Bariatric Surgery Candidates

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Background: 'Information Session' is held on a weekly basis at our hospital to inform the public about bariatric/metabolic surgery. The course format includes education pertaining to: a) the disease of obesity, b) the different types of bariatric procedures and their advantages, disadvantages, c) changes in mortality risk post-surgery, and improvement of co-morbidities and life quality, and d) surgery costs. Ample time is provided at the end of the session for questions from the attendees. In this report, we address the most frequently asked questions potential bariatric surgery candidates ask regarding bariatric/metabolic surgery.

Methods: The population of severely obese individuals who attend information session at our hospital on a yearly basis is approximately 2500. Questions frequently asked by the potential surgery candidates, along with answers our practice provides, will be presented and discussed.

Results: We found that the most frequently asked questions at bariatric/metabolic surgery public information session involve the following issues: 1) safety in returning to work, 2) postoperative lapse before exercising, bathing, having intimate relations, 3) pregnancy risks, 4) hair loss, 5) skin elasticity and plastic surgery, 6) consumption of alcohol, 7) weight regain, 8) need for vitamins after surgery, 9) diseases or conditions that are contraindications to surgery, and 10) more.

Conclusions: Severely obese individuals seeking information about bariatric/metabolic surgery ask a number of questions which primarily concern lifestyle changes following the procedure. The most frequently questions will be presented and open discussion regarding answers to these questions will be encouraged from representatives of other practices.

O.075 Is Routine Postoperative Admission at the Intensive Care Unit Required After Bariatric Surgery in Morbidly Obese Patients with Severe OSAs?

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Background: Obstructive sleep apnoea (OSA) occurs in 70% of the bariatric population. The fear of pulmonary complications (and respiratory arrest as the most serious one) after bariatric surgery (BS) causes many routine admissions of patients with severe OSA at the Intensive Care Unit (ICU) for continuous visual and electronic monitoring. Aim of this study was to assess outcome and necessity of routine post BS monitoring of severe OSA patients at the ICU.

Methods: from October 2010 till September 2012, 584 morbidly obese patients underwent BS and were entered into a consecutive database. We routinely perform polysomnography pre-operatively. Patients with severe OSA (apnoea-hypopnoea-index (AHI) > 30/hrs) were admitted to the ICU for 24 hrs hr postoperative observation and received continuous positive airway pressure (CPAP) or bi-level positive airway pressure (BPAP). Supplemental oxygen was administered and pulse-oximetry was continuously measured. The database was retrospectively reviewed regarding patient demographics, co-morbidities, CPAP/BiPAP use and compliance, need for mechanical ventilation, desaturations (<92%O₂) and complications.

Results: 91 patients (15.6 %) had severe OSA and were admitted at the ICU. Of those patients, 53 % was male, mean age was 49 years (23–66) and mean BMI 48.6 (27.4–77.6).

No in-hospital death or pulmonary complications occurred. Mean length of stay (LOS) at the ICU was one night (range 1); in hospital stay was 2.53 days (1–11). 34 (41.5%) patients experienced one or more desaturation episodes (O₂ below 92 %). Mean number of desaturations below 92 % O₂ during ICU admission was 1.8 (1–11). No interventions because of desaturation were required. Maximum oxygen supplementation was 8 L in a single patient who experienced 4 desaturations

Conclusion: The exponential growth of bariatric surgery creates an increasing logistical strain on costly critical care resources. After reviewing the results of 91 patients with severe OSA who were routinely submitted to the ICU after BS, it can be concluded that routine admission is not mandatory when PAP is compliantly used. Administrating opioids in the direct post-operative period should be avoided while CPAP compliance should be guaranteed at the general surgical ward (GSW). Oxygen supplementation up to 10 liters can be provided at a GSW.

The results of this study call for a study that focuses at CPAP compliance and the severity of OSA to realize guidelines for IC admission after BS.

O.076 Quality of a National Bariatric Registry - Does Voluntary Compromise Validity?

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Introduction: In the United Kingdom a voluntary register (The National Bariatric Surgical Registry- NBSR) has been designed to provide a comprehensive analysis of complications of patients undergoing bariatric surgery in the UK between 2008 and

2010. However the voluntary nature of submissions has led some to question whether this register truly represents the complication rates associated with bariatric surgery. **Methods:** Between November 2011 and November 2012 a total of 33 cases were referred to a single bariatric consultant for a medico-legal opinion. Of these, 18 cases involved patients who underwent primary bariatric surgery in the UK between March 2008 and March 2010. These cases were identified and the operating surgeon and complications of these cases recorded.

Results: 12 of the 18 cases involved surgeons registered on the NBSR. Of these 12 cases, there were 7 early complications (namely leak in 5 cases and abdominal sepsis in 2 cases) and 5 late complications (obstruction (2), ulceration, stricturing and sepsis). None of the late complications were recorded in the NBSR. In addition 6 cases involved complications from surgeons not registered with the NBSR. These complications included 2 early complications (bleeding requiring panectomy and post-operative nerve damage) and 4 late complications (slipped gastric band (2); small bowel obstruction and band fracturing) none of which were listed.

Conclusion: This study suggests that there is a significant volume of early and late complications following bariatric surgery which do not feature on the register. This raises questions as to the reliability of the NBSR.

O.077 Bariatric Fellowships a Validated Training Experience

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Introduction: It is agreed that there is a learning curve for laparoscopic Roux-en-Y gastric bypass. Most series in the literature put an arbitrary figure against this of between 50–100 cases. Is this sufficient to establish competence? We propose that the learning curve can be reduced by high quality, intensive training as provided by a fellowship programme and also that it is quality of training rather than quantity of cases that is key.

Methods: The prospectively compiled bariatric database from the unit was interrogated. The lead trainer started up a bariatric service in 2006 and the first 10 bypasses performed from this period was scrutinised. Patient demographics, length of operating time and 30-day outcomes were assessed. This was then compared to first ten bypasses performed by the bariatric fellow.

Results:

	Lead Surgeon cohort	Fellow cohort	p-value (t-test)
Age (years)	43.9	39.1	0.26
Comorbidity score	1.2	1.9	0.31
Mean Pre-operative weight (kg)	125.1	114.5	0.19
Pre-operative Body Mass Index (kg/m ²)	43.4	41.2	0.32
Mean Operating time (mins)	231.5	140.70	0.0057
Length of stay (days)	4.8	1.2	<0.001
Study period (months)	9.1	3.2	-
Percentage readmissions / reoperations	10% (1)	20% (2)	-

Conclusions: There was no significant difference between the patient populations. The intensity of the training is higher in a fellowship. 10 bypasses were performed in a shorter time period on a fellowship than without (by a factor of 3). The operating time per case was significantly shorter during the fellowship suggesting the advantage of quality mentorship in an intense environment.

O.078 Elimination of the Learning Curve in a High Volume Bariatric Centre

PRESENTER: N. Geubbels¹

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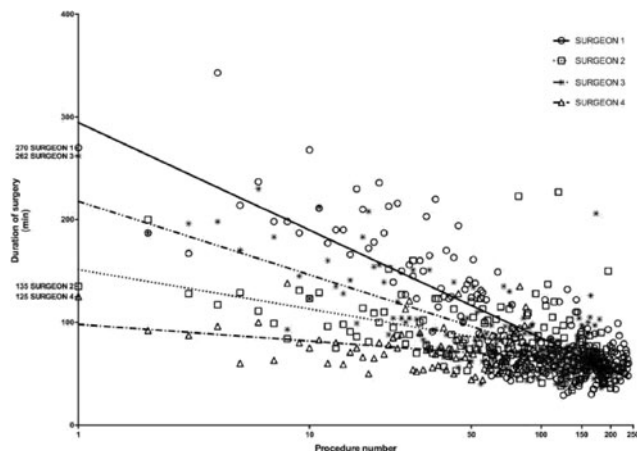
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Background: The learning curve can be defined by duration of surgery (DOS) and by complications. This study aims to clarify the learning curve defined by DOS and complications, stratified by four different surgeons with different backgrounds in a high volume bariatric centre and to identify possible predictors for a prolonged DOS.

Method: We retrospectively analyzed the records of all 713 consecutive LRYGB patients operated in our centre from December 2007 until July 2012. We stratified the data by surgeon and chronology of 50 cases. A linear regression model was constructed to identify predictors for prolonged DOS.

Results: All surgeons had their steepest decrease in DOS within their first 150 patients and showed no significant decrease thereafter. SURGEON 1 had the steepest curve, followed by SURGEON 3,2 and 4. Male gender ($r=10,577$, 95%CI: -16,843- -4,311, $p=0,001$), BMI ($r=0,582$, 95%CI: 0,110-1,054, $p<0,05$), SURGEON 2 ($r=8,234$, 95%CI: 0,929-15,540, $p<0,05$), SURGEON 3 ($r=10,204$, 95%CI: 2,710-17,307, $p<0,01$), calendar year 2007 ($r=128,505$, 95%CI: 89,161- 67,849, $p<0,001$), 2008 ($r=126,872$, 95%CI: 103,067-150,677, $p<0,001$), 2009 ($r=76,448$, 95%CI: 57,262-89,161, $p<0,001$), 2010 ($r=22,908$, 5%CI: 7,994-37,823 $p<0,01$) and experience ($r=0,155$, 95%CI: -0,248- -0,061, $p=0,001$) were predictors for a prolonged DOS. There where 67 (9,3%) short term major complications. There were no significant differences in complication rates between surgeons nor groups of 50 consecutive patients.

Conclusions: The learning curve of LRYGB defined by DOS is about 150 cases. Patient selection, proctorship of an experienced laparoscopic bariatric surgeon and maturation of the bariatric program within the entre are factors flattening the learning curve.



O.079 Can Virtual Reality Laparoscopic Simulators be a Certification Tool for Bariatric Surgeons?

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Introduction: Aim of the present study is to assess the ability of the simulator Lap Mentor (Symbionix) to discriminate surgical experience in bariatric laparoscopic procedures and propose its role in the certification of bariatric surgeons.

Methods: 20 surgeons were divided in two groups according to their experience in laparoscopic and bariatric surgery: the General Group included 10 general surgeons performing between 50 and 100 non bariatric laparoscopic procedures. The Bariatric Group included 10 experienced bariatric surgeons (from 50 to 100 bariatric laparoscopic procedures). All were tested on the laparoscopic simulator in one

basic skills task (eye-hand coordination) and in two tasks of the gastric bypass module (Task 1: creation of the gastric pouch, Task 2: gastro-jejunal anastomosis). **Results:** Comparing Bariatric and General Group, no significant differences were found in the basic skills task. Gastric bypass module- task 1: significant differences ($p<0.05$) were found in the volume of the gastric pouch (21 vs 48 cc), in the percentage of fundus included in the pouch (8.4 vs 29.4%), in the complete dissection at the angle of His (10 vs 3 participants) and in the safety parameters. Task 2: in the Bariatric Group enterotomies were smaller compared to the General Group and they were created at a minor distance from the end of the cut limb (65.8 vs 53.3 mm).

Conclusions: The simulator could be proposed as a certification tool for bariatric surgeons discriminating their specific competencies especially in the technical details that affect the long- term outcomes of the procedure.

O.080 The Utility and Validation of a Novel Operative Competency Assessment Tool (PROSPER) for Laparoscopic Roux-en-Y Gastric Bypass: Outcomes from a National Bariatric Training Fellowship in the United Kingdom

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Introduction: There is a paucity of assessment tools that could be utilised to determine operative competencies attained during training and early learning curve of laparoscopic roux-en-Y gastric bypass (LRYGB). The PROSPER (Prospective Record of Obesity Surgery Participation and ExpeRIence) tool was developed for this purpose and validated by fellows undertaking a National training fellowship in the United Kingdom.

Methods: PROSPER utilised an objective scoring system (1 to 6 [1=step performed by trainer, 3=step performed with substantial verbal support, 6=proficient performance]) to score the fellow's performance during five components of undertaking LRYGB (formation of the gastric pouch, mobilisation of roux limb, formation of gastrojejunal/jejuno-jejunal anastomosis and closure of mesenteric spaces). Each fellow and trainer prospectively completed the assessment tool for 2–3 randomly selected LRYGB each week. Pearson correlation was used to determine differences between fellow and trainer scores.

Results: Five fellows participated in this study of whom four undertook 6-month and one a 12-month fellowship. In total fellows performed 237 LRYGB as main operating surgeon; of which 123 (52%) PROSPER assessments were completed (providing a total of 665 component assessments). Both assessment scores and number of components successfully completed by the fellows increased during fellowship training. There was good correlation between fellow self-scores and trainer scores for the components of LRYGB assessed ($r^2=0.72$, $p<0.0001$).

Conclusions: In this National Bariatric Fellowship program PROSPER was successfully utilised as an operative competency assessment tool that enabled objective assessment of operative performance and experience gained during LRYGB.

O.081 Effect of Prior Bariatric Fellowship on Peri-operative Outcomes in the First Three Years as Independent Consultant Bariatric Surgeon

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Introduction: Bariatric surgery (laparoscopic Roux-en-Y gastric bypass (LRYGB), sleeve gastrectomy (LSG), and gastric banding (LAGB)) has been proven to be the only effective, long-term treatment for morbid obesity. These are technically challenging operations associated with low, but significant risk of complications and mortality. The aim of this study was to evaluate the peri-operative outcomes for bariatric surgeries in the first three years as independent Consultant Surgeon following completion of bariatric fellowship training.

Methods: Prospectively collected database of all patients undergoing primary bariatric procedures between March 2010 and February 2013 was analysed. Data on patient demographics, conversion to open, length of stay (LOS), and peri-operative (14-day) complications including mortality were analysed.

Results: Over the 36-month period, 237 patients (188 female, 49 male) underwent primary bariatric procedures (190 LRYGB, 35 LSG, 12 LAGB). The mean age was 45 (20–67) years and BMI was 48.7 (36.3–64.8) kg/m². The ASA classes were I-6 (2.5%), II-132 (55.7%), and III-99 (41.8%). The majority (61.6%) were in OS-MRS Group B (Group A: 43.6%, C: 6.7%) classification system. The average LOS was 2.5 days (range 1–14). There were no conversions to open surgery and no mortality. There were 6 (2.5%) immediate post-operative complications as shown below:

Complications (No. of patients)	Re-operations
Post-operative bleed (3)	3 (Re-laparoscopy)
Chest infection (3)	2 (Negative re-laparoscopy)

One patient (0.4%) was re-admitted with small bowel obstruction following internal hernia requiring laparoscopy and repair.

Conclusion: Bariatric fellowship ensured high-quality surgical outcomes for laparoscopic bariatric surgery from the very beginning as independent Consultant Surgeon. Fellowships should be an essential part of bariatric training throughout the world.

O.082 Medical Student's Knowledge at Polish Medical Universities About the Possibilities of the Surgical Treatment of Obesity

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Background: Number of patients requiring surgical intervention due to morbid obesity in Poland is rising. Providing of appropriate results of treatment in this group of patients will only be possible due to the cooperation of specialized obesity treating centers with a wide range of medical doctors of all specialties who understand the essence of the treatment. The aim of the study is to determine the level of Polish medical universities students' knowledge about indications, needs, methods and results of obesity treatment.

Methods: By the means of standardized questionnaire containing 10 multiple choice questions, prepared in cooperation with Bariatric and Metabolic Surgery branch of Polish Surgery Society, a cohort study was performed on 468 medical V year students, 143 students from Jagiellonian University Medical Faculty, 117 students from Warsaw Medical University, 136 students from Lublin and 72 students from Poznan Medical University.

Results: After analysis of the student's answers to the questions that were concerning such important subjects as the epidemiology of morbid obesity, the indications for surgical treatment of obesity and the outcomes of surgically treated obesity, the results obtained were indicating poor knowledge among Polish medical university students regarding the seriousness of the problem and the consequences for human health that can be caused by morbid obesity.

Conclusions: The results also indicated the need for introduction of the related issues of morbid obesity into the educational program of the Surgery course and in the academic year 2010/2011 the Faculty of Medicine of Jagiellonian

University introduced the subject of metabolic surgery into their educational program.

O.083 The Meta-PROSE: A Novel Guideline, Checklist, and Score for Articles Reporting Observational Study Designs in Metabolic Surgical Research

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Introduction: Existing study reporting guidelines provide structure only for development of articles evaluating experimental trials and observational studies in medicine. There is no widely adopted guideline for constructing and assessing reports of observational study designs in metabolic / bariatric surgery. A novel guideline and score, the Metabolic Surgery Plan for Reporting Observational Surgical Evaluations (**Meta-PROSE®**), was created to meet this need.

Methods: Endorsed medical reporting guidelines, including CONSORT, STROBE, and TREND, were compared to observational metabolic surgery (OMS) research protocols. Guidelines correlated with a content-fulfillment score were assembled by integrating items identified as essential to medical and surgical observational study designs with items unique to OMS reporting.

Results: Meta-PROSE contains a 60-item checklist that specifies essential structural elements and OMS content recommended to fully and transparently report case-control, cohort, and cross-sectional study designs. Article completeness is analyzed by a 0–2 point-per-item score: If a required item is absent, 0 points; mentioned, 1; thoroughly treated, 2. Given 120 possible points, 0–<60=incomplete manuscript; 60–<80=partially complete; 80–<100=relatively complete; 100–120=very complete.

Conclusions: Although adherence to a reporting guideline has been shown to streamline manuscript development, increase rigor of analyses, decrease bias and reporting error, and facilitate data combining for systematic reviews, it is not required to achieve peer publication. Meta-PROSE offers a common standard by which authors can readily construct OMS articles, and against which journal editors and reviewers may uniformly evaluate article fitness for publication into the evidence base. Adoption of the Meta-PROSE may augment the quality and utility of the metabolic surgical literature.

O.084 Retrospective Analysis of Bariatric Surgery in High-risk Patients

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Aim: In this retrospective study, we evaluated high risk patients who underwent bariatric surgery. One hundred and twenty patients who underwent bariatric surgery by the same surgical team were investigated. All patients' medical records were obtained by examining follow up form of anesthesia, patients files and nurse observation files.

Material and methods: In this study, high risk criteria were divided into two groups as; major and minor criteria. Major criteria were accepted as; Cardiovascular system, respiratory system, renal, hepatic diseases and diabetes. Minor criteria were accepted as; Age > 40 year, tobacco usage, alcohol usage, body mass index > 43 kg/m², sleep apnea syndrome, gastro-esophageal reflux disease. Patients who had one minor plus one major criteria or two major criteria were classified as high risk patient group. Patients who did not have high risk criteria were remained out of the study. In aspect of 120 patients within this study we evaluated morbidity, mortality and postoperative intensive care unit requirement furthermore we aimed to find out factors affecting mortality, morbidity and intensive care unit requirement.

Results: We enrolled % 3.3 mortality rates, % 42.5 morbidity rates and % 25 intensive care unit requirement. Most frequent complications were respiratory failure, band related complications and cardiovascular complications.

Conclusion: In our study; Age over 40 years, body mass index > 43 kg/m², sleep apnea syndrome, cardiovascular system diseases, diabetes, prolonged pneumoperitoneum time at laparoscopic surgery, open surgical procedures, hypoalbuminemia and blood glucose level over 126 mg/dL were accepted as factors increasing morbidity and postoperative intensive care unit requirement.

O.085 Short Term Evaluation of Laparoscopic Gastric Bypass in Elderly, Assessment of Comorbidities and Postoperative Complications

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Introduction: Laparoscopic gastric bypass in an elderly population is considered to be a high risk operation. An evaluation of the long existing comorbidities and short term safety of this procedure in this population was performed.

Method: A single center, single surgeon, retrospective analysis of all patients older than 60 years of age who underwent a laparoscopic Roux-en-Y gastric bypass between October 2004 and September 2012 has been performed. Patient files were reviewed and patients were telephoned to obtain lacking data. Demographics, postoperative course and comorbidities were registered.

Results: A total of 394 patients were included. There were 253 women and 141 men. Mean age was 63,8 years (range 60–78 years). Mean BMI at surgery was 42,3 kg/m² (range 25,6-75,5 kg/m²). 59 patients (15%) have had bariatric surgery before. Preoperatively 260 patients (66%) had hypertension, 118 (30%) diabetes, 219 (55,6%) dyspnea, 229 (58%) joint pain, 182 (46%) back pain, 222 (56%) hypercholesterolemia, 150 (38%) GERD. Mean hospital stay was 4 days (range 2–19 days). In the early postoperative course there was no in hospital mortality and 34 (8,6%) patients suffered from postoperative complications. 19 (4,8%) patients had some sort of bleeding (4 needing gastroscopy, 3 needing laparoscopy, 9 only needing transfusion to control the hemorrhage), 4 (1%) patients had cardiac, 8 (2%) respiratory complications (1 reintubation) and 4 (1%) patients had a postoperative infection (1 intra-abdominal abscess). There was no 30-day mortality.

Conclusion: Laparoscopic Roux-en-Y gastric bypass is safe and feasible in an elderly population.

O.086 Risk Factors for OSA in Morbidly Obese Patients Undergoing Bariatric Surgery

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Introduction: Obesity increases the risk of obstructive sleep apnoea (OSA) and influences perioperative management. This study aims to clarify the predictive factors for OSA in patients undergoing bariatric surgery.

Methods: A retrospective review of prospective database of obese patients who underwent bariatric surgery in a single institution. Patients with an apnoea/hypopnoea index (AHI) of >=15 were considered to have OSA. A univariate and multivariate analysis of potential risk factors for OSA was performed.

Results: 504 patients (104 male) with a median (range) preoperative body mass index of 49.6 (33.2- 87.1) kg/m² underwent bariatric surgery, of whom 485 patients underwent polysomnography. Patients with OSA (n=216, 46%) were older (median age; 46 vs. 45, p=004) and more frequently male (28% vs. 15%, p=0001), had greater

neck (median, 44 vs. 42cm, p=0001) and waist circumferences (median, 134 vs. 129cm, p=0.015), higher Epworth score (7 vs. 5, p=003), and had higher prevalence of type-2 diabetes (38% vs. 28%, p=0.016) and hypertension (49% vs. 40%, p=0.047). Hip circumference, level of triglycerides, cholesterol, LDL, HDL, smoking, and alcohol were not significantly different between the two groups. Multivariate analysis identified neck circumference and Epworth score to be independent predictors of OSA. The incidence of OSA was 54% in patients with neck circumference of >=44, 51% in those with an Epworth score of >=7 and 56% when both factors were present.

Conclusions: Patients with neck circumference of >=44 and/or Epworth score of >=7 should be considered at high risk of OSA and this should influence their perioperative management.

O.087 The Influence of Bariatric Procedures on Non-alcoholic Fatty Liver Disease in Patients Operated in the 2nd Department of Surgery at Jagiellonian University

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Introduction: Obesity is affecting progressively larger number of people. Obesity is not just an aesthetic issue, but it is also associated with numerous comorbidities such as non-alcoholic fatty liver disease (NAFLD). The aim of this study is to determine the impact of bariatric procedures on non-alcoholic fatty liver disease in patients operated for morbid obesity in the 2nd Department of Surgery UJ CM.

Methods: Prospective study involved a group of 20 patients operated for morbid obesity in the 2nd Department of Surgery UJ CM in the period from 2010 to 2011. Prior to surgery, all patients underwent abdominal ultrasonography and the assessment of the degree of liver steatosis was conducted by the means of the four-level Sherif-Saadeh scale. The levels of alanine aminotransferase and aspartate aminotransferase were also measured. During the follow-up performed 12 months after surgery, re-evaluation of the parameters was performed.

Results: Mean loss of BMI was 29.04 ± 8.87%. Analysis of the liver ultrasound images revealed regression of steatosis in all patients. The average degree of hepatic steatosis, on the basis of the scale used, was reduced from 1.85 before the treatment to 0.15 after surgery. Liver function tests have also improved with ALT levels decreasing on average by 56% and AST levels decreasing by 50%.

Conclusion: On the basis of our study, we believe that bariatric procedures in patients with morbid obesity not only decrease excessive body weight but also reduce the degree of non-alcoholic steatosis and improve liver function.

O.088 Safety of Bariatric Surgery in Cirrhotic Patients

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Introduction: Few studies have shown the safety of performing bariatric surgery in patients with cirrhosis. This review aims to reveal our experience of performing bariatric surgery in this group of patients.

Methods: A retrospective review of 1709 consecutive patients who underwent bariatric surgery from September 2005 to March 2013 was conducted. Liver wedge biopsies were done in all patients who grossly appeared to have cirrhosis.

Results: Twenty six patients (1,5%) who underwent bariatric surgery either had cirrhosis (n=16) or stage 3 fibrosis (n=10) documented by liver wedge biopsy. The mean age was 55.2 (range 36–66), the mean BMI was 53.7 (35.9-86.1), and seventeen patients (65%) had diabetes mellitus, which were all significantly greater than that of non cirrhotic patients. All cases of cirrhosis were Child A without varices or collaterals and were due to nonalcoholic steatohepatitis (NASH). Eight patients had either known cirrhosis (n=6) or stage 3 fibrosis (n=2) preoperatively. Six of these patients underwent

sleeve gastrectomy and the other two underwent gastric bypass. Of the eighteen unknown cirrhotic or fibrosis patients ten underwent gastric bypass, five underwent sleeve gastrectomy, and three underwent laparoscopic adjustable gastric banding. Length of stay was a mean of 2.6 days (range 2–5 days). There were no episodes of liver decompensation or 90 day mortality.

Conclusion: Bariatric surgery can be safely done on patients with compensated cirrhosis or stage 3 fibrosis due to NASH.

O.089 Portal Thrombosis –A Challenging Complication After Sleeve Gastrectomy

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Background: Portal thrombosis (PT) has been described as a relatively rare complication after several laparoscopic procedures. Early diagnosis of PT may improve its severe outcome. We present our experience in managing PT after laparoscopic sleeve gastrectomy (LSG).

Method: All the cases presenting PT after LSG and treated in our Centre between January 2006 and December 2012 have been analysed. Clinical signs, diagnostic work-up, therapeutic protocol and evolution are commented.

Results: LSG was performed on 2590 patients out of whom six developed PT (6/2590). Added to them, one more patient was referred to us from another hospital. Our six patients were diagnosed within the first 24 hours after readmission, based on clinical findings, CT scan or surgery. They manifested nonspecific signs and symptoms: abdominal or back chest pain, nausea, vomiting, fever, diarrhea and stool blood.

The treatment was only conservative in four cases (consisting in full dose of unfractionated heparin and inhibitor of tissue plasminogen activator in one case) and laparoscopic surgery was associated in two patients. The outcome was favorable and long term oral anticoagulant therapy followed. In four patients genetic coagulation disorders were discovered. The case referred from another hospital was admitted in emergency with septic shock and general peritonitis. She underwent open surgery with bowel resection in association with supportive treatment of septic shock and multiple organ failure. Details about the evolution of this dramatic case will be presented in the paper.

Conclusions: PT after LSG is a rare, difficult to diagnose postoperative complication with a potentially lethal outcome if diagnosis and treatment are delayed or not properly sustained. The bariatric team should be aware of the true importance of early diagnosis and adequate treatment of PT to improve its outcome.

O.090 Resolution of Gynaecological Issues After Bariatric Surgery— A Retrospective Analysis

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Introduction: 156 female patients in the fertile age group who underwent Laparoscopic Sleeve Gastrectomy were analysed for preoperative gynaecological issues and their resolution after 6 months. The main issues were, Hirsutism, Polycystic Ovarian disease, Stress Urinary Incontinence, Menstrual Dysfunction and Infertility.

Methods: Serial female patients in the age group 20 to 50 who underwent LSG under the same surgeon were retrospectively analysed. 96 patients had Hirsutism, 33 patients had Stress Urinary incontinence, 132 patients had some sort of menstrual irregularities, mostly oligomenorrhoea and 11 patients had already taken some form of treatment for Infertility. PCOD was documented on

Ultrasound scan in 67 patients. All patients were operated by the same surgeon between June 2010 and June 2012. Review was recorded at 6 months, one year and then every half yearly.

Results: 77 of the patients with Hirsutism showed resolution (approx .80%), 14 of the 33 patients with stress Urinary Incontinence showed either total resolution or gross alleviation of symptoms. All patients presenting with Menstrual irregularities showed return to normal menstrual patterns. Of the 67 patients with PCOD, 54 showed resolution. Of the 11 patients with infertility, 4 patients became pregnant without any formal infertility treatment.

Conclusion: Laparoscopic Sleeve Gastrectomy is associated with high levels of resolution of Gynaecological problems related to Obesity. Infertile patients with Obesity related PCOD and Infertility show high level of return to normal fertility status after weight loss.

O.091 Bariatric Surgery as Fertility Treatment

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Introduction: Obesity is an epidemic causing metabolic comorbidity and mortality. Besides that, obesity also leads to subfertility in women, and therefore lowers pregnancy rate. Furthermore, it increases miscarriage, which as a result leads to an increase in maternal and neonatal morbidity and mortality. The aim of this study was to investigate the pregnancy rate, as well as the miscarriage rate and the menstrual cycle before and after bariatric surgery.

Method: Between 2007 and 2011, a total number of 382 female patients, 18 to 45 years, underwent laparoscopic bariatric surgery (gastric sleeve or gastric bypass). Those patients were sent a questionnaire in November 2012, about their fertility and related topics. Outcome data have been collected in a database, and analysis was performed using SPSS.

Results: Mean weight after bariatric surgery was 75 kilograms, compared to 125 kilograms before surgery. Before surgery, 115 patients (30%) did not have a regular menstrual cycle. This changed in more than half of the patients after they lost weight: 60% did get a regular cycle. 28% of the women had never been pregnant before surgery, and 6% of these women became pregnant after surgery. The percentage of miscarriage was 23%. There were no miscarriages in the group that became pregnant after surgery.

Conclusion: Losing weight by bariatric surgery leads to improved regulation of menstrual cycle, increase in pregnancy rate and lower percentages of miscarriage. Further research will be needed to investigate the role of bariatric surgery in patients with subfertility.

O.092 Gonadal Status and Outcome of Bariatric Surgery in Obese Men

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Introduction: Obesity-related hypogonadotropic hypogonadism (OrHH) occurs in over 40% of morbidly obese men. OrHH may reduce the beneficial effects of bariatric surgery due to chronic lack of testosterone could reduce post-surgery fat loss, potentiate the catabolic effects of surgery on muscle and bone, and attenuate the positive effects of surgery on insulin sensitivity, dyslipidaemia, decreased libido and sexual dysfunction. The objective of this study is to evaluate the outcome of OrHH after bariatric surgery and whether OrHH results in less weight loss.

Method: Observational study with measurement of serum gonadal hormones, and assessment of body composition, glucose, lipid and bone metabolism during the first year after bariatric surgery in 13 men with OrHH (free

testosterone (free T) < 225 pmol/L) and 11 age-matched eugonadal morbidly obese men (free T > 225 pmol/L).

Results: Serum free T was inversely related to body weight ($R = 0.65$, $P < 0.0001$) and rose gradually after bariatric surgery, in eugonadal as well as in OrHH men, by 30 pmol/L for every 10 kg loss of weight. In 3 patients serum free T remained within the hypogonadal range despite substantial weight loss. Gonadal hormone status prior to surgery did not affect the 1-year outcome of surgery.

Conclusions: OrHH is a reversible condition in the majority of obese men. It does not reduce the efficacy of bariatric surgery. Preoperative weight-adjusted normal values are recommended to avoid an incorrect diagnosis of hypogonadism in obese men.

O.093 Carotid Intima Modifications After Gastric Bypass for Morbid Obesity

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Introduction: Carotid intima-media thickness (C-IMT) can be considered as an early marker for atherosclerosis, thus representing a reliable cardiovascular risk predictor. Bariatric surgery represents an effective prevention tool for cardiovascular diseases in obese patients, acting through a complicated network of pathophysiological paths, of which weight loss merely constitutes the most evident epiphenomenon. The aim of this study is to evaluate C-IMT variations in patients submitted to Roux-en-Y gastric bypass (RYGB) and possible correlations with biometrical parameters and cardiovascular risk factors.

Methods: 24 patients who underwent RYGB for morbid obesity were submitted to supra-aortic trunk B-mode ultrasound evaluation prior to the procedure and at 6- and 12-month follow-up. C-IMT and sistodiastolic pick-flows were registered at 3 levels (bulb, common and internal carotid). At the same times biometric and sero-hematic parameters were collected. For statistical analysis SPSS20 pack was used.

Results: A considerable C-IMT reduction was found, which resulted as being significant at common carotid level at 12-month follow-up ($p: 0.0267$ right; $p: 0.0221$ left), getting close to significance at 6-month controls ($p: 0.06$ right, $p: 0.0523$ left). Among biometrical and sero-hematic risk factors, we registered a significant reduction in BMI, diastolic blood pressure, HDL cholesterol and C-peptide. Owing to the relatively short duration of follow-up it was not possible to assess any specific correlation with cardiovascular risk reduction.

Conclusions: RYGB is associated with a significant decrease in C-IMT. Pathophysiological processes underlying such a variation and possible association with a cardiovascular risk reduction should be evaluated by long term prospective trials.

O.094 Does Bariatric Surgery Improve Urinary Stress Incontinence in Morbidly Obese Women?

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Introduction: Morbid Obesity is known to be a contributing factor to the development of stress urinary incontinence in women. We evaluated the urinary symptoms of morbidly obese patient's pre and post bariatric surgery.

Method: Between January 2011 and January 2013, 47 morbidly obese women with stress incontinence underwent bariatric surgery. All 47 completed detailed urinary function questionnaires

Results: The median BMI were 48(39–61) kg/m². Thirty-two (68%) patients underwent gastric bypass, fourteen (30%) underwent sleeve gastrectomy and one underwent a banding procedure. Thirty-three patients (70%) reported urinary

leaking on more than one occasion per day. Thirty-five (74%) required daily incontinence pads. Eighteen (38%) reported changing pads more than once per day. Nineteen (40%) reported moderate to severe leakage. Thirty-four (72%) reported leaking on sneezing or coughing. Eighteen (38%) reported significant interference with their daily life (>6/10, visual analogue). At a median 6(1–12) months following bariatric surgery the median weight loss was 62(20 to 162) lbs. Eighteen patients (38%) reported complete resolution of their symptoms ($p < 0.001$, c^2). Thirty-five (74%) did not require pads ($p < 0.001$, c^2). Only 5(11%) changed their pads more than once per day ($p < 0.01$, c^2). Forty-three (91%) reported mild or no leakage ($p < 0.001$, c^2). The interference with life score dropped from a median preoperative level of 5 to 1. Thirty-four (72%) women reported a marked improvement in their symptoms (>6/10, visual analogue)

Conclusion: Bariatric surgical intervention results in a clinically significant improvement in urinary stress incontinence in the early months following surgery in the majority of symptomatic morbidly obese females.

O.095 Bariatric Surgery and Moderate Obesity (BMI 30–35 kg/m²): Our Experience

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Introduction: Moderate obesity (BMI 30–35 kg/m²) affects 25% of the Western population. The role of bariatric surgery in this context is currently debated, reserved for patients with co-morbidity, as an alternative to conservative medical treatment. We describe our experience in moderately obese patients treated with bariatric surgery.

Materials and Methods: Between September 2011 and September 2012, 25 patients with grade I obesity and comorbidities, underwent bariatric surgery: preoperative mean BMI 33.2 kg/m², 10 males, mean age 42 years. In presence of type 2 diabetes mellitus (T2DM) (56%), gastric bypass was performed; in cases with hypertension (64%) and obstructive sleep apnea (OSA) (12%), sleeve gastrectomy was performed. All operations were performed laparoscopically.

Results: Mean follow-up was 12.4 months. A post-operative complication occurred: bleeding from the trocar site, resolved with surgery in local anesthesia. Reduction in average BMI was 6 points, with a value of 27.2 kg/m². Of the 14 patients with T2DM, 12 discontinued medical therapy, because of euglycemia (86%); 14/16 (87%) of hypertensive patients achieved normal blood pressure. Complete remission was observed in patients with OSAS.

Conclusions: The results of our study support the validity of bariatric surgery in patients with BMI 30–35 kg/m². Our opinion is that in the future bariatric surgery could be successful in selected cases of moderately obese patients.

O.096 Operation as a Strategy for Treating Leaks: A Prospective Analysis in 6030 Consecutive Laparoscopic Roux-en-Y Gastric Bypass Operations

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Background: Leaks are one of the most serious complications following laparoscopic Roux-en-Y gastric bypass (LRYGB) and associated with high morbidity and prolonged hospital stay. Optimizing treatment is of utmost importance for the clinical outcome.

Methods: 6030 consecutive cases of LRYGB performed by the same team of surgeons were prospectively registered. Patients with symptoms scoring severity grade 2 to 5 on a 5-grade validated classification system were defined as clinically relevant leaks and included in the study.

Results: Leakage rate was 1.06 % (64/6030). Diabetes ($p=0.015$) and hyperlipidaemia ($p<0.001$) increased the risk. 70% of leakages were treated surgically and 30% conservatively. Of patients with leaks, 12.5% (8/64) needed ICU treatment and mortality was 3 % (2/64). Early leaks (5d) were treated with suture of the defect (91%) and/or surgical drainage (59%). Late leaks (>5d) were managed with surgical drainage (82.6%) and insertion of gastrostomy tube (65.5%). Operative treatment was associated with shorter hospital stay. Patient delay and delay in treatment are associated with an adverse outcome.

Conclusion: Our data suggest that at clinical suspicion of a leak an aggressive surgical approach without undue delay is desirable. In early leaks (5 days) we recommend direct laparoscopic exploration with suture of the defect, and drainage. Patients with late leaks (>5days) or obstruction should be treated with surgical drainage and insertion of a gastrostomy tube.

O.097 Structural Modification of Classical Bilio-pancreatic Diversion After Unsatisfactory Result: Codification of a New Procedure

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Introduction: Scopinaro's Classical Bilio-Pancreatic Diversion (BPD) has shown excellent results on weight loss and resolution of comorbidities in morbidly obese patients. Nevertheless, collateral effects of malabsorption, such as severe proteic malnutrition, secondary hyperparathyroidism and sideropenic anemia can become evident at follow-up. In a small number of patients, these conditions may present in such a severe form, to prompt the need of a surgical revision. When an elongation of the common limb at the expense of the bilio-pancreatic one is performed, the unfavourable effect of weight regain can be expected.

To prevent the tendency to weight regain, we elaborated a structural modification of the classical BPD, reducing the volume of the gastric pouch to 40 ml, and changing the lengths of the alimentary and common limbs (the first reduced to 50 cm; the latter elongated from 50 to 200 cm).

Methods: We prospectively collected in-hospital and post-operative data, on the patients submitted to the revisional procedure at our institution for chronic sequelae of malabsorption.

Results: From May 1st 2003 to December 31th 2012, 31 patients were treated with the structural modification of BPD, either with an open or laparoscopic approach. Major post-operative morbidity was 15%. With a post-operative follow-up of 2 years in 83% of patients, a clear improvement of the adverse effects of malabsorption was recorded, with a concurrent increase of percent excess weight loss.

Conclusions: The procedure is clinically safe and effective in controlling the adverse effects of chronic malabsorption after classical BPD, not only preventing weight regain, but definitely increasing the excess weight loss.

O.098 Conversion of Gastric Band to Scopinaro's Biliopancreatic Diversion

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Introduction: Gastric banding still been done on a large scale, although it is declining and sleeve gastrectomy is rising. However, the results in terms of loss of weight were very minimal and patients' starts to gain more weight after a very short period of time.

Materials & Methods: 45 patients with failed gastric band in terms of loss of weight will be presented. All of them had gone removal of the band and conversion to Scopinaro's Biliopancreatic Diversion in one setting. The results of this will be presented.

Results: Restrictive procedure in the form of gastric band does not lead to loss of weight and another procedure has got to be done for that.

Conclusion: Scopinaro's Biliopancreatic Diversion is a feasible and safe procedure after failure of gastric band. A short video will be presented.

O.099 BPD as Revisional Procedure After Failed Adjustable Gastric Bands (AGB)

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Introduction: Obesity is multifactorial disease with several, multi-level metabolic, cognitive and other back-up mechanisms defending obesity. Multi-level weight defence contributes to treatment failure in some of bariatric patients/procedures.

AGB were among the most common operations in Europe. Over time 10-20% of AGB fail because of weight regain, or due to band related complications. In case of re-do surgery, replacement of failed restrictive procedure with combined or malabsorptive may be among the best options.

Material and method: Between January 2003 and December 2012, 2781 different bariatric procedures were performed in our Hospital, 1952 (70.2%) of those being AGB. 202 (10.3%) of AGB patients required re-operation. In 52 (25.7%) BPD was chosen as re-do procedure. In BPD group, 27 (51.9%) patients were T2DM. In prospective way, pre re-operation, 1, 3, 6, 12 and 24 mths post-op weight, %EWL, BMI changes and change in T2DM parameters (glycaemia, IRI, Hb1A, HOMA IR) were monitored.

Results: BPD after failed band resulted in mean WL (42.8kg± 5.6kg), BMI decrease (55, 6±5.8 to 31.1±4.9) mean % EWL (78.9±9.2%) - all significantly ($p<0.001$). In diabetic patients glycemia decreased (9,8±2.4mmol/l to 5,0 ±1.1mmol/l $p<0.001$), Hb1A decreased (6.2±1.1% to 4.1±0.7%), HOMA-IR decreased (12,2 ± 1,3 to 4,5 ± 1,9 $p<0.001$). In the first weeks antidiabetic medication dropped dramatically, 6 months after BPD 15 patients (57, 7%) were without any DM medication, in one year remission and/or improvement was observed in 99% T2DM patients.

Conclusions: BPD is an effective procedure after failed AGB both in terms of weight loss and T2DM improvement/resolution.

O.100 Roux-en-Y Gastric Bypass Versus Scopinaro Biliopancreatic Diversion

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The aim: of the present study was to compare the results after gastric bypass (GBP) and biliopancreatic diversion Scopinaro (BPD).

Materials and methods: 30 patients undergone GBP and BPD. Patients were divided into two groups: 15 pts undergone GBP Fobi-Capella, 15 pts—undergone BPD (common limb 70–80 cm). In GBP group mean BMI was 55,4±9,2 kg/m². Triglycerides (TGL) levels 1,5±0,7 mmol/l; low density lipoproteins (LDLP)-4,02±0,3 mmol/l; very low density lipoproteins (VLVL)-0,6±0,1 mmol/l; high density lipoproteins (HDL)- 1,1 mmol/l; cholesterol-6,5±0,8 mmol/l. In BPD group before the operation mean BMI - 57, 9±8, 5 kg/m². TGL were 1,7±0,6 mmol/l; LDLP reached 4,2 mmol/l; VLVL- 0,5±0,1 mmol/l; HDL-1,04 mmol/l; cholesterol-6,8±0,5 mmol/l. Before surgery mean glycemia 9,02 mmol/l, HOMA-IR was 17,7, insulin - 56,8 mIU/ml, C-peptide - 9,4, HbA1C - 7, 3 %.

Results: After 24 months in group GBP mean BMI-32,4±8,3 kg/m², EWL-60,3%, in BPD group 34,8±3,8 kg/m², EWL-77,4%. In GBP group cholesterol levels decreased to 4,7±0,4 mmol/l; levels of TGL decreased till 1,4±0,7 mmol/l; LDL-3,4±0,6 mmol/l, VLDL-0,3±0,1 mmol/l, HDL-1,5±0,1 mmol/l. In

BPD group cholesterol levels decreased to 4.5 ± 0.8 mmol/l; levels of TGL decreased till 1.1 ± 0.5 mmol/l; LDL- 3.3 ± 0.4 mmol/l, VLDL- 0.2 ± 0.1 mmol/l, HDL- 1.0 ± 0.1 mmol/l. After GBP mean glycemia – 5, 06 mmol/l, HOMA-IR was 3,02, insulin 32,4 mIU/ml, C-peptide – 5,02 ng/dl, HbA1C – 6,7 %. After BPD mean glycemia – 4, 27 mmol/l, HOMA-IR was 2, 98, insulin – 24, 7 mIU/ml, C-peptide – 3, 78 ng/dl, HbA1C – 6, 5 %.

Conclusions: Both GBP and BPD are effective bariatric procedures, which provide constant weight loss, improvement of metabolic profile. After BPD patients mention better quality of life, what might be related to lesser gastric restrictive component of BPD, comparing to GBP, where the stomach is probably preserved.

O.101 Nutritional and Metabolic Disturbances in Long Term Biliopancreatic Diversion Patients

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Introduction: Biliopancreatic diversion is a powerful bariatric procedure but carries significant risk of causing metabolic disturbances

Methods: Patients who have undergone biliopancreatic diversion between 1993 and 2008 were surveyed and results analysed. Retrospective data was accessed and an update questionnaire, and request forms for haematology, a biochemistry and bone density study was forwarded to each patient.

Results: 267 patients underwent a variety of biliopancreatic diversion between 1993 and 2008. Long term weight results, mortality and incidence of revision and reversal data are presented.

To date the following percentages of patients have been identified with nutritional deficits. 66% iron deficiency, 80% Vit D deficiency, 35% Vit A deficiency, 9% Vit E deficiency, 20% Vitamin B12 deficiency, subnormal serum albumen levels 15% and subnormal calcium levels 17%. Vitamin K is no longer easily tested in Australia but in the past 25% of patients were identified with a deficiency. Of the patients undergoing bone density studies to date 95% have been shown to be osteopaenic or osteoporotic.

Conclusion: Despite being an effective procedure for long term weight control, being well tolerated and having demonstrated highly effective improvement of co-morbidities BPD does have a high incidence of nutritional disturbance. Patients require close long term supervision, advice about supplements and encouragement to adhere to their instructions. Unfortunately contact with long term patients is frequently lost and patients often suspend supplements because of cost. This is a cause for concern.

O.102 Duodenal Switch as a Revisional Bariatric Surgery

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Introduction: Failure of the weight loss or regaining weight after bariatric surgery depends on many factors. Patient weight, bmi, type of operation, patient compliance after surgery and more. Some of those patients will demand and required revision of failed bariatric surgery.

Method: Retrospective analysis of 52 revisions performed from January 2000 to December of 2010 has been done. 28 Roux and Y Gastric Bypasses (RYGB), 20 Vertically Banded Gastroplasty (VBG), 10 Laparoscopic Gastric Bands (LB) and 2 Vertical Sleeves (VS) had been revised to Duodenal Switch (DS). Data collected were: weight, bmi before primary bariatric surgery, weight, bmi in the time of revision, % of Excess Weight Loss (EWL) mean time to revision, weight, bmi, %EWL after revision, mean time from revision to evaluation and complications.

Results: RYGB 28 female, mean weight, bmi before primary surgery 147 kg, 59.28, %EWL 26.35%, mean time to revision 10.6 years. Mean weight, bmi after revision 79 kg, 26.28, % EWL 90%, mean follow up post revision 4.5 years. Complication one patient excessive weight loss. VBG 16 female 4 men.

Mean weight, bmi before surgery 145 kg, 54.88, mean time to revision 11 years. % EWL 8.9%. Follow up post revision 4.3 years, weight, bmi 72 kg, 26.8, % EWL 87.19%.

Complication one gastric leak. LB 10 female. Mean weight, bmi before primary surgery 120 kg, 46.9. % EWL till revision 24% mean time 10 years. Post revisions mean weight, bmi 63 kg, 24.7, % EWL 93.75%. Time 2.5 years. VS 2 female. Weight bmi before 87–106 kg, 35–40. % EWL before revision 16%–12.5%. Time 3–2 years. Weight bmi post revision 63–60 kg, 24–23. % EWL 87–92%.

Conclusion: DS is a very efficient revisional bariatric surgery

O.103 Isolated Duodenal Switch (IDS) - Does the Restriction Matter - 5 Years Observation

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Background: A lot of surgical approaches have been described to reduce excess body weight. Goal of this study was to investigate the role restriction by malabsorptive procedures. The Duodenal Switch is the well-known operation, took out restriction completely and performed isolated duodenal switch.

Methods: From January 2000 to July 2004, 37 patients underwent laparoscopic gastric banding in a first step. In a second step all patients underwent a laparoscopic duodenal switch between February 2003 and July 2009. By all patients restriction was removed by completely opening the band or removal the band by second operation. We followed the patients and collected the following data: demographic, morbidity and mortality, BMI, EWL, HbA1C, TG's, Albumin, Ferritin, PTH and Vitamin A. After isolated restrictive procedure patients showed an average excess weight loss (EWL) of 24% in a median time of 43 month. Thus all patients showed a tendency to gain weight after initially sufficient weight loss. Therefore an isolated duodenal switch was performed. After 60 month an average EWL of 65,5 % was observed. Early postoperative complications were seen in 10,8% whereas late complications were observed in 8,1% of the patients. No conversion to open surgery was required, and no mortality occurred. 13,5% of the patients suffered from a hypalbuminemia.

Conclusion: A restriction is an important part of BPD-DS. LAGB is not the best operative option in bariatric surgery. The malabsorption alone by IDS influence the metabolic changes and influences eating habits. Better results could be achieved with additionally Sleeve restriction.

O.104 Excess Weight Loss and Weight Loss Failure After Duodenal Switch

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Introduction: Duodenal switch (DS) is a very successful bariatric surgery with a % Excess weight loss (%EWL) in the range of 85 to 95% and minimal weight gained recidivism. Some of those patients still will required revisions secondary to excess weight loss, vitamins deficiency, decreased calcium absorption or weight loss failure (WLF). 1150 open DS had been performed from January 1998 to December 2012. 15 patients required revisions secondary to excessive weight loss (EWL), Vitamin D, A deficiency, Iron deficiency anemia (IDA), decreased Calcium absorption, protein malabsorption or social situation. 8 patients required revision secondary to WLF.

Method: Charts review identified 15 patients whom required revision secondary to EWL or deficiency and 8 patients secondary to WLF. Data collected were: weight,

bmi before primary DS and after revision, %EWL before and after revision, improvement of protein and vitamins deficiency, complications and type of revision. Time from primary to revisional surgery, time after revision.

Results: In deficiency group mean weight, bmi before index surgery were 126 kg, 46.56. Before revision mean weight, bmi, Protein, Albumin, Vit D25, Vit D1-25, Vit PTH, Ferritin, Hemoglobin, Hematocrit levels were: 63.63 kg, 23.14, 5.1 g/dl, 2.8 g/dl, 35 ng/ml, 70 pg/ml, 29 mcg/dl, 77 pg/ml, 15 ng/ml, 11.6 g/dl, 34% respectively. %EWL was 106%, mean time to revision 5.6 years. Those patients underwent lengthening of the common channel. Post revision weight, bmi and other parameters in this same order 68.18 kg, 25.6, 5 g/dl, 3 g/dl, 49 ng/dl, 51 pg/ml, 43 ug/dl, 61 pg/ml, 57 ng/ml, 12 g/dl, 36%. Time to evaluate post revision 3.1 years. %EWL 98. In WLF group mean weight, bmi before surgery 163 kg, 59. %EWL 55. Time to revision 5.2 years. Weight, bmi post revision 79 kg, 29. Total %EWL 84.35 (mean additional 29%). Those patient had re-sleeve or shortening of common channel or both. One re-sleeve patient developed leak.

Conclusion: Revisions of DS are rare, results are good and predictable.

O.105 Single-anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy. Long-term Results

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Introduction: Single-anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S) is a one-loop duodenal switch with a 200 to 250 common channel.

Aim: To analyze the long-term results on weight loss and metabolic disease of SADI-S.

Patients and method: Over the last 6 years 144 patients were submitted to SADI-S. Mean age was 46 years, mean weight 121 kg and mean BMI 45 (33–77). 60% of the patients were diabetics, 53% had hypertension and 46% had sleep apnoea. Mean preoperative glycemia was 170 and mean glycated hemoglobin 7.72 for diabetic patients. 66% of the patients had dyslipidemia.

Results: 50 patients were submitted to SADI-S with a 200 cm common channel and 94 with a 250 cm common limb. There was one gastric leakage and one anastomotic leakage. Mean excess weight loss was 75% at 6 months, 93% at 12, 90% at 3 years and 100% at 5. 3 patients failed to reach a 50% EWL. 91% of diabetics had HbA1c <6% in the first year, 74% at 3 years and 83% at 5. Dyslipidemia decreased to 43% in the first year, 31% at 3 years and 18% at 5 years. Hypoalbuminemia presented in 9% of the patients in the first year, 11.8% at 3 and 7.7% at 5 years. 6 patients have been submitted to revisional surgery for undernutrition.

Conclusions: SADI-S is a simplified duodenal switch with satisfactory results on weight loss and metabolic disease in the long-term.

O.106 How to Select Patients for Bariatric Surgery. Role of Staged Treatment

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Background: Staged operation might be the solution to the problem of appropriate bariatric operation. In our experience Lap Band is considered first choice operation (excluding Prader Willy Syndrome, Diencephalic Obesity, and patient refusing Lap Band program). In cases of long-term unsatisfactory results we perform a mini gastric bypass as second stage.

Methods: Our Lap Band series consists of 2650 Patients (Sept 1993-Dec 2011). Mortality 0%. Mean %EWL 49.7. Major complication requiring reoperation 5.7%.

19% candidate to a second procedure. Second stage consists in removing the Band and perform a laparoscopic omega loop (220 cm) with an antecolic gastrojejunal anastomosis and antireflux stitches. Before April 2011 we considered as second stage bilio-pancreatic diversion, with excellent results in terms of weight loss, but high rate of side effects. From April 2011 to January 2013 total series of patients underwent to mini gastric bypass as second stage was 45.

Results: Weight at LAPBAND time was 138.3±21.8; at the time of mini gastric bypass was 119.1±24.3 Kg and %EWL 17.2±11.3; at 1 year was 71 Kg and %EWL 71.3±13.4; at 15 months was 60.3 Kg and %EWL 80.1. 1 case of reoperation for the omega loop fistula.

Conclusion: In our Lap Band series of patients, 81% reached good results in terms of weight loss, good compliance, low risk of complication and 0% mortality (avoiding a second procedure); 19% were selected for mini gastric bypass with better results in terms of weight loss but higher surgical risks.

O.107 Patient with BMI <35: When Bariatric Surgery Indicated?

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Introduction: According to the existing IFSO rules bariatric surgery is acceptable for the patients with BMI > 40 or within 35–40 when associated with obesity-related diseases. Bariatric surgeons often face with the patients who refer for bariatric surgery having BMI < 35. The aim of this study is to estimate results of bariatric surgery in the patients who had primary bariatric operations with BMI < 35.

Materials and methods: 46 patients with preoperative BMI < 35 have underwent primary bariatric operations: 10 LAGB, 5 BPD/DS, 31 – Sleeve Gastrectomies (SG). Many of them weighted more in the past and referred for the surgery with weight regain after conservative treatment. 9 patients including 5 who underwent BPD/DS had special indications for surgery: 5 – bulimia nervosa (BN) and 4 – Diabetes mellitus type2 (DM2).

Results: Mortality-0, early complication- 1/46 (2,1%) perigastric abscess after SG. The less predictable results in the long-run were observed after LAGB, good 2–3 year results after SG. All patients undergoing BPD/DS have good weight loss with resolution of DM2 and bulimic attacks, four of them at price of late complications and side effects.

Conclusions: Bariatric surgery is acceptable treatment for well-motivated, properly informed patients with BMI < 35 failed with conservative attempts. Special indications may be DM2 and BN. Sleeve Gastrectomy is considered as an optimal first-stage option.

O.108 Immediate Obstructive Sleep Apnea (OSA) Improvement After Bariatric Surgery, Without Significant Upper Airway Imaging Changes

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Introduction: Bariatric surgery is a well-documented treatment of OSA. We investigated whether improvement of OSA, one month after surgery, was associated with changes in neck CT images or insulin resistance.

Methods: Thirty super-obese patients with OSA (mean BMI: 58.64±6.89), underwent a variant of biliopancreatic diversion (BPD-RYGB-LL). Patients were subjected to polysomnography and MDCT neck scan preoperatively and one month postoperatively. Specific measurements MDCT scan included the retrolingual cross sectional airway area, upper airway length, percentage

of neck fat, and tongue fat as measured by radiodensity. The perpendicular distance from the mandibular plane to the hyoid bone (MPH) was also measured. Fasting glucose and insulin, HOMA-IR and HbA1c were also measured. **Results:** Mean excess weight loss (EWL%) was 22.19±7.46 ($p<0.0001$). The other results are presented in the following table.

		Preoperatively		1 month postoperatively		p
		Pts (n)	Values	Pts (n)	Values	
OSA evolution	RDI	30	65 ±35.20	18	37.88 ±27.78	0.0077
	SaO ₂	26	89.62 ±6.33	18	93.89 ±2.19	0.0089
	CPAP usage	30	90%	30	40%	<0.0001
Neck CT	MPH	15	24.92 ±5.86	15	21.67 ±6.65	0.2232
	UAA	15	162.7 ±86.16	15	185.8 ±58.51	0.2986
	UAL	15	94.92 ±7.55	15	90.50 ±6.67	0.112
	NECK FAT %	15	43.75 ±4.58	15	41±5.39	0.2021
	RLD	15	32.67 ±14.69	15	31.33 ±15.65	0.9309
Glycaemic control	Glucose	30	117.1 ±42.75	30	96.9 ±17.1	0.0193

Pts patients, OSA: Obstructive Sleep Apnea, BMI: Body Mass Index (kg/m^2), EWL: Excess Weight Loss (%), RDI: Respiratory Disturbance Index (events/hour), CPAP: Continuous Positive Airway Pressure, MPH: Mandibular Plane-Hyoid perpendicular distance (mm), UAA: Upper Airway Area (mm^2), UAL: Upper Airway Length (mm), RLD: Retro-Lingual Density (HU)

Conclusion: The marked improvement of OSA was associated with the comparable improvement of insulin resistance and not to the decrease of the volume or the fat infiltration of the upper airways soft tissues.

O.109 Randomized Study Comparing Gastric Bypass with Long Pancreato-biliary Limb (2m) and Gastric Bypass with Long Alimentary Limb (1,5m)

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Background: Several studies indicate that increasing the alimentary limb length in gastric bypass operation only produces a minor increase in excess BMI loss. Few studies have addressed the efficacy of increasing the length of the pancreato-biliary limb.

Methods: Prospective study of 187 consecutive laparoscopic Roux-Y gastric bypass operations performed over 2 years (2004–2005) in Iceland. The patients were randomized into two groups; gastric bypass with a 2m BP-limb and a 60 cm A-limb (N=93) or gastric bypass with a 150 cm A-limb and a 60cm BP-limb (N=94).

Results: Mean BMI was 47.9 (38.3–70.4), mean age 40.6 (17–74) years and 85 % of the patients were females. Follow-up after 5 years was 85%. 18 months following surgery the weight loss was significantly higher in the BP-limb group ($p<0.001$) and this difference remained 7–9 years after surgery. Weight gain occurred in both groups and seven to nine years after surgery EBML was

78.4% in the BP-limb group compared to 67.1% in the A-limb group ($p<0.001$). Most patients (70–80%) needed adjustment of their supplementation (iron, D-vitamin and calcium) during the study period, significantly more often in the BP-limb group compared to the A-limb group ($p<0.001$). Patients in the BP-limb group had more frequent stools than patients in the A-limb group; otherwise gastrointestinal symptoms scoring were comparable. Complication rate was similar.

Conclusions: Gastric bypass with 2m BP-limb gives better weight loss than gastric bypass with 150cm A-limb. Metabolic follow-up is of utmost importance, as most patients needed repeated adjustments of their supplementation.

O.110 Circulating Amino Acids Profile Before and After Sleeve Gastrectomy: A Metabolomic Study

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Introduction: After laparoscopic sleeve gastrectomy (LSG) metabolic syndrome improves dramatically, in particular with a high rate of type 2 diabetes remission. Circulating branched-chain amino acids (BCAAs) and aromatic amino acids (AAAs) were recently related to insulin resistance and diabetes. We applied metabolomic profiling to understand the mechanisms of this metabolic response after SLG.

Method: Circulating amino acids (AAs) were measured in plasma from 20 subjects by nuclear magnetic resonance (NRM) metabolomics analysis before and at 1- and 6-month postoperatively after LSG.

Results: Circulating AAs and BCAAs significantly decreased after LSG at 1- and in particular at 6-month post-op (Table, data are presented as median±median absolute deviation). Metabolites derived from BCAAs oxidation also decreased after LSG.

Conclusion: LSG demonstrated a significant modification of circulating AAs metabolic profile in particular those AAs related to obesity, insulin sensitivity and metabolic syndrome, as BCAAs. These data suggest that the specific action determined by LSG on glucose homeostasis occurs by mechanisms other than weight loss.

Metabolite	Pre operation	1 Month after	6 Months after	P - value
Acetoacetate	83.3±82.1	175.9 ±119.9	35.6±31.4	1vs3 p=0.303
Creatine	38.0±16.7	13.9±10.3	16.0±9.7	1v 3 p<0.005
Lactate	575.4 ±215.8	950.0 ±374.4	454.2 ±178.3	1vs3 p=0.038 1vs2 p<0.005
Phenylalanine	37.8±6.3	30.5±5.0	29.7±6.4	1vs3 p<0.005
Pyruvate	256.2±66.9	282.9±79.7	339.4 ±100.6	1vs3 p=0.007
Tyrosine	101.9±22.8	77.7±23.6	85.6±17.5	1vs3 p<0.005
Leucine / Isoleucine	327.3±66.4	234.2±40.7	225.5±37.9	1vs3 p<0.005

Valine	302.2±59.8	223.8±43.2	233.3±29.0	1vs3 p<0.005
Glycine	289.9±36.1	351.7±62.6	353.3±48.7	1vs3 p<0.005
Formate	18.5±4.3	17.6±4.0	14.1±2.7	1vs3 p=0.020

O.111 Weight Outcomes and Dietary Compositions in a Multiethnic After Metabolic Bariatric Surgery

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Introduction: This study aims to investigate excess weight loss (%EWL) and diet composition trends in metabolic bariatric surgery (MBS) patients, including multi-ethnic differences from pre- to 1 year post-surgery.

Methods: This retrospective study included patients who underwent MBS between the periods of September 2008 to December 2011. Nutritional data and weights were obtained pre-MBS and at 12 months post-MBS.

Results: Eighty-four patients were included in this study (46% Chinese, 29% Malay, 25% Indian). Mean±SD for age was 40.2±10.5 years and pre-operative BMI was 43.5±8.9 kg/m². At baseline, the mean caloric intake for Chinese were 1727 kcal/day contributed by 18% protein, 51% carbohydrates and 31% fat; Malays consumed 1943 kcal/day comprising 16% protein, 53% carbohydrates and 31% fat whereas Indians consumed 1928 kcal/day with a composition of 16% protein, 54% carbohydrates and 30% fat. No significant difference was detected among ethnicities. At 12 months, overall mean %EWL was 68.9% (Chinese=70.2%, Malay= 65.3%, Indian=71.2%). The Chinese, Malays and Indians had an average caloric consumption of 1197 kcal, 836 kcal and 1329 kcal respectively. The compositions were 20% protein, 47% carbohydrates and 33% fat for the Chinese; 21% protein, 44% carbohydrates and 35% fat for the Malays and 19% protein, 48% carbohydrates and 33% fat for the Indians. Compared to baseline, protein intake was increased while carbohydrates were decreased for all patients (p<0.05). Despite having the highest %EWL, Indians significantly consumed more calories and carbohydrates. No correlations were found between %EWL and diet compositions.

Conclusions: With no correlations between diet and weight loss, this infers the presence of other factors implicating the outcome variances among ethnic groups.

O.112 The Effect of Bariatric Surgery on Blood Levels of Chemerin and Omentin-1

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Introduction: Omentin-1 is a new adipokine produced in the visceral adipose tissue that seems to be inversely correlated with obesity and insulin resistance. Chemerin, another new adipokine is chemoattractant for macrophages and might be a link between obesity, inflammation and atherosclerosis. The

aims of our study was to analyze chemerin, omentin-1, tumor necrosis factor alpha (TNF-) and insulin levels in a group of morbidly obese patients (MO) in comparison with a group of normal weight healthy (NWH) subjects and to evaluate the impact of six months surgical weight loss on these parameters.

Method: We tested chemerin, omentin-1, TNF- and insulin in 20 MO patients before and 6 months after sleeve gastrectomy (SG). Baseline levels of the same parameters were compared with those from 20 NWH subjects.

Results: Body mass index (BMI) reduction was significant after surgery (47.78±8.27 kg/m² to 33.52±6.64 kg/m², p<0.001). Omentin-1 levels were lower in the MO group in comparison with the NWH subjects (p<0.05). Chemerin and TNF- levels were significantly higher in the MO patients in comparison with NWH subjects (81.59±41.91 ng/ml, 31.25±16.16 pg/ml respectively, p<0.001). At baseline chemerin was correlated with insulin level (r=0.7, p<0.05) and HOMA index (r=0.73, p<0.05). There were no statistically significant changes in chemerin and TNF- six months after SG.

Conclusion: Obesity is associated with high levels of chronic inflammation markers and low levels of omentin-1. In our clinical study it seems that six months surgical weight loss was not associated with an important reduction in chronic inflammation.

O.113 Relative Contributions of Energy Restriction and Duodenal Bypass in Early Improvements in Glycaemic Control After Bariatric Surgery. A Study in ZDF Rats

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Introduction: Bariatric surgery performed in severely obese individuals with type 2 diabetes leads to substantial improvements in glycaemic control and even resolution of diabetes often within a few days of surgery. The relative contributions to this phenomenon of energy restriction, weight loss or bypass of the duodenum remains unclear. We sought to explore the mechanisms responsible for this early improvement in glycaemic control in a surgical model utilising ZDF rats.

Methods: 12–14 week old ZDF rats were allocated to one of five experimental groups. (1) *ad-libitum* controls (AL), (2) pair-fed non-operated controls (PFNO), (3) pair-fed sham-operated controls (PFSO), (4) sleeve gastrectomy (SG) and (5) gastric bypass (RYGB). All rats underwent oral glucose tolerance test (OGTT) prior to manipulation and again one week after manipulation. Glucose and insulin responses during the OGTT were measured.

Results: Prior to manipulation the mean ± SEM fasting glucose for all rats was 13.1 mmol/L ± 0.4 and the 2-hour glucose level was 20.6 mmol/L ± 0.9, indicating the presence of diabetes. One week following surgery RYGB rats had a mean fasting glucose of 7.9 mmol/L ± 0 and a 2-hour OGTT glucose of 9.8 mmol/L ± 0.6 indicating substantial improvement. This improvement was substantially greater than that seen in PFSO, PFNO and SG groups (p<0.05). **Conclusions:** Small improvements in glycaemic control were observed after 7 days as a result of energy restriction in PFNO, PFSO, SG groups, whereas substantial improvement was seen in the RYGB group, indicating an important role for the duodenum in this phenomenon.

O.114 Changes in Gastrointestinal Hormones and Inflammatory Markers After Bariatric Surgery in Morbidly Obese Type 2 Diabetic Patients

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Background: Obesity had been postulated as a cause of a pro-inflammatory state mediated by adipokines which appear to be reversed due to changes in

gastrointestinal hormones after bariatric surgery. We examined the relationship between the changes in inflammatory markers, gastrointestinal hormones and weight loss after bariatric surgery in morbidly obese, diabetic Asian patients.

Materials and Methods: 18 morbidly obese type 2 diabetes patients were recruited and underwent Roux-en-Y gastric bypass (RYGB, n=11), sleeve gastrectomy (LSG, n=5), adjustable gastric banding (AGB, n=1) and bilio-pancreatic bypass (BPD, n=1) at a single center. Fasting levels of obesity-related inflammatory cytokines (IL-1b, IL-6, IL-8, IL-10, IFN- γ , TNF- α , MCP-1, Fractalkine and RANTES), gastrointestinal hormones (GIP and insulin) as well as OGTT were collected pre-operatively and 1 month post-operatively. HOMA-IR was calculated and all results were compared between the various types of surgeries.

Results: The mean age was 38.7 \pm 3.0 years, mean duration of diabetes was 3.6 \pm 0.3 years and subjects were followed up an average of 12 months. The change in BMI was significant before and after surgery for all groups (p<0.05). RYGB had significantly more weight loss compared to other procedures. Mean post-operative fasting insulin levels and HOMA-IR were significantly reduced (p<0.01, p=0.02). There was a significant increase in IL-8 (p<0.01) and TNF- α (p=0.03) after surgery in all groups at 1 month.

Conclusions: Metabolic surgery significantly reduces BMI, insulin secretion and HOMA-IR at 1 year. RYGB is associated with early improvement of insulin sensitivity at 1 month and greater weight loss at 1 year.

O.115 GLP-1, GIP, PYY and Intestinal Gluconeogenesis Do Not Account for the Early Improvements in Fasting Glycaemia Following Gastric Bypass

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Introduction: Remission of type 2 diabetes mellitus in the severely obese commonly occurs within six days after gastric bypass surgery. The explanation for this remains unknown. We evaluated the role of the gut and gut peptides in the early changes in fasting glycaemia seen following gastric bypass.

Methods: Simultaneous sampling of fasting portal and central venous blood was undertaken on day 0 through 6 following surgery in 6 severely obese subjects undergoing gastric bypass surgery. 3 individuals had type 2 diabetes and 3 did not. Samples obtained were assayed for glucose, GLP-1, GIP and PYY. Insulin was also measured in central venous blood at the same time points.

Results: Fasting glucose levels fell in all instances (8.4mmol/L \pm 3.3 to 4.2mmol/L \pm 1.1) and normalised in all 3 diabetic individuals. The difference between central venous and portal venous glucose at each time point was inconsequential. There was no increase seen in fasting GLP-1 or fasting PYY following surgery, in either group of patients. However, an approximate 2-fold increase in GIP was seen following surgery, in the non-diabetic subjects.

Conclusions: We find no evidence to support either, (a) the intestinal gluconeogenesis hypothesis or (b) a role for GLP-1, GIP or PYY in the early improvements in fasting glycaemia noted following gastric bypass surgery.

O.116 Effects of Gastric Bypass on Glucose Homeostasis, Pancreatic Islet and Gut Morphology, and Metabolite Profile in a Porcine Model

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Objective: The majority of Type 2 diabetes (T2D) patients display remission after Gastric bypass (GBP). The exact underlying mechanisms are unknown. In a porcine model we studied GBP effects on hormonal and metabolite profiles, as well as on endocrine cell populations in the gut and pancreatic islets.

Methods: Piglets weighing approx. 25 kg were operated with a standard GBP during laparotomy. Pouch size was 20 ml, GE-EA distance was 150 cm, Treitz to EA 60 cm. Pigs were subjected to oral (OGTT) and intravenous (IvGTT) glucose tolerance tests and blood and biopsy sampling immediately pre- and 4 weeks postop. Sham-operated, pair-fed pigs served as controls.

Results: In comparison with controls, GBP pigs demonstrated lower glucose and higher insulin levels during IvGTT and a higher glucose and a more rapid and robust insulin response during OGTT. During OGTT, GBP-pigs also displayed robustly elevated GIP levels, whereas GLP-1 levels were unchanged. Morphologically they displayed higher beta cell mass and more extra-islet beta-cells as well as an elevated density of GIP-producing K-cells, but a reduced density of GLP-1-producing L-cells in the gut. Metabolomic analyses revealed that GBP provoked lower levels of free fatty acids (FFA) and higher levels of branch-chain amino acids (BCAA).

Conclusions: GBP in pigs provokes 1) enhanced insulin secretion and increased beta cell mass. 2) enhanced GIP, but not GLP-1 secretion. 3) changes in gut endocrine cells. 4) reduced FFA and elevated amino acids. These responses are all concomitant with improved glycemia.

O.117 Developing a Diet Induced Obesity Animal Models for Surgical Used

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Introduction: The global epidemic of obesity is rapidly evolving as one of the major global health issues. Animal models reflecting the human obesity are very important in the development of surgical model that mimics the human procedure. We described our experience for the development of this type of obesity in animals.

Methods: Two groups of Wistar male rats (200 - 250gr) were enrolled in this study. They were offered for four months ad libitum water and in ninety-eight (98) either normal chow diet (12.5MJ/kg, 60% carbohydrates, 13% fat) or in seventy-one (71) high-fat diet (18.4 MJ/kg, 35% carbohydrate, 45% fat). Weight evolution was examined every week. Metabolic characterization with blood biochemistry oral glucose tolerance test, insulin tolerance test was examined frequently.

Results: The animals with access to high fat diet were fed more energy relative to the animals with access to normal chow diet. Statistically significant difference in weight appears after 12 weeks. The high fat animal developed visceral obesity, liver steatosis, and dyslipidemia and showed a worsening of glucose tolerance over time.

Conclusion: In this study we performed a characterization of a diet induced obesity animal model. It shares many features with human obesity. We cannot easily used for the study of type II diabetes. May be more time is needed. In our hands is a very useful model for investigating the mechanism by which the bariatric surgery affects the weight regulation.

O.118 Visceral and Subcutaneous Tissue STAMP2 and HIF1Alfa Gene Expressions in Morbid Obesity

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Introduction: STAMP2 has an important role on adipose tissue function, insulin resistance and inflammatory process. Expression of HIF1-alfa, is increased with

hypoxia which may end up with increased metabolic events. Herein, correlation between obesity and gene expressions is evaluated.

Methods: 30(6M) patients with a mean (range) age of 37(18–64) years who underwent surgery for morbid obesity were included. Samples obtained from omentum and subcutaneous tissue during operation and stored for RNA isolation. 5 patients were excluded from the study due to improper RNA isolation. Remaining samples were evaluated semi-quantitatively for HIF1- α and STAMP2 gene expressions using the real-time PCR method. Gene expression levels were assessed according to BMI, HbA1c, and blood glucose and lipid levels.

Results: The mean BMI was 46 (36–60) kg/m². STAMP2 expression was decreased in both omentum and subcutaneous adipose tissue as compared to normal (GAPDH) levels. Omental STAMP2 expression was 1.034(0.15–3.11) times higher than expression in subcutaneous tissue. STAMP2 expression has inverse correlation with increased BMI and patients having HbA1C >6. There was a significant correlation between BMI and HIF1- α expressions on visceral and subcutaneous tissues. Significant correlation was also found between STAMP2 expression on omentum and STAMP2 and HIF1 expressions on subcutaneous tissue.

Conclusions: STAMP2 expression is decreased in omentum and subcutaneous tissue in parallel to the severity of obesity, which results in decreased insulin sensitivity in adipose tissue. On the other hand, higher STAMP2 expression on visceral tissue might be due to inflammatory process triggered by hypoxia in adipose tissue which appears as increased HIF1- α expression.

O.119 Angiotensin-Converting Enzyme Gene Insertion / Deletion Polymorphism in Dyslipidemia

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Introduction: The renin–angiotensin system (RAS) plays a role in the pathogenesis of metabolic diseases. Polymorphisms in the angiotensin-converting enzyme (ACE) gene may modulate lipoprotein metabolism. We aimed to study the relationship of ACE ID genotypes with serum T-C, LDL-C, HDL-C, TG, and VLDL-C together with glucose in dyslipidemic and normo-lipidemic subjects.

Methods: In this study, the ACE ID genotypes and allele frequencies were analyzed in 167 individuals (97 dyslipidemic and 70 normo-lipidemic subjects), and the relative contribution of ACE ID polymorphism on plasma lipid and lipoprotein levels, as well as risk factors were evaluated. ACE I/D gene polymorphism analysis was performed by polymerase chain reaction. The genotype distributions obeyed Hardy-Weinberg equilibrium.

Results: In normo-lipidemic volunteers, the frequencies of II, ID and DD alleles were 15.7%, 61.4% and 22.9%, while in dyslipidemic subjects 14.4%, 52.6% and 33.0%, respectively. In dyslipidemics, glucose levels were significantly higher in II subjects when compared to ID and DD individuals and body mass without fat was lower in ID subjects when compared to II and DD individuals.

Conclusions: The allelic frequencies of ACE II, ID and DD were similar in dyslipidemic and normo-lipidemic subjects, suggesting that ACE ID polymorphism has no effect on plasma lipid-lipoprotein levels in dyslipidemic subjects. Further studies are required to determine the dyslipidemia-specific ACE genetic effects and its undefined biological mechanism.

O.120 Improved Glucose Control and Glucose-Dependent Insulin Secretion in Isolated Pancreatic Islets in an Obese Type 2 Diabetic Rat Following Gastric Bypass Surgery

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Background: Type 2 diabetes mellitus (T2DM) undergoes remission in most obese patients following gastric bypass (RYGB). We examined differences in glucose control and glucose-dependent insulin secretion in pancreatic islets of obese diabetic rats one week after bariatric surgery in an obese diabetic rat, the same period in which most humans have normalization of their glucose and insulin parameters.

Methods: Forty-one 12–14 week-old ZDF rats were separated into *ad-libitum* controls (AL, n=8), pair-fed non-operated controls (PFNO, n=8), pair-fed sham-operated controls (PFSO, n=8), sleeve gastrectomy (SG, n=8) and RYGB (n=9) groups. Rats received an oral glucose tolerance test (OGTT) before and one week after manipulation. At one week, their pancreatic islets were isolated for glucose-dependent insulin secretion studies 24 hours later.

Results: Pre-experimental fasting glucose was 13.1mmol/L \pm 0.4 (mean \pm SEM) with a 2-hour post OGTT glucose of 20.6mmol/L \pm 0.9. After one week, RYGB rats had a fasting glucose of 7.9mmol/L \pm 0.4 and a 2-hour OGTT glucose of 9.8mmol/L \pm 0.6. These were significantly lower than AL, PFSO, PFNO and SG (p<0.05) groups. RYGB rat islets showed significantly increased glucose-dependent insulin secretion when exposed to 2mM of glucose compared to PFSO, PFNO and SG rats (p<0.05).

Conclusions: In a ZDF rat model RYGB resulted in a marked improvement in glucose control one week after surgery which was not seen in AL, PFSO, PFNO and SG groups. This was associated with increased glucose-dependent insulin secretion from the isolated pancreatic islets, suggesting there is an early improvement in cell function following RYGB, which is not seen after SG.

O.121 Interrelationship of Bradykinin B₂ Receptor Gene 58 T/C Polymorphism on Blood Pressure and Central Obesity

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Introduction: The bradykinin B₂ receptor (B₂R) gene functions in insulin resistance. The effects of -58T/C genotypes over obesity phenotypes (fat mass, waist circumference, body mass index, blood lipids) and hypertension indicates in metabolic syndrome (MS) and non-metabolic syndrome (non-MS) study groups were evaluated.

Method: The study population consisted of 45 MS patients and 62 healthy controls. Bradykinin gene -58T/C genotypes were determined by PCR and subsequent restriction with Mae III.

Results: B₂R gene -58T/C frequencies for homozygous wild type (T/T), heterozygous (T/C) and homozygous polymorphic (C/C) genotypes for MS and non-MS patients were respectively as: 22.2%, 29%, 55.6%, 53.2% and 22.2%, 17.7%. In the non-MS group, the diastolic blood pressure and waist circumference were effected from variant allele with an increasing effect, whereas in the MS group no such relationship exists. Comparison of T/C and C/C

genotypes, the T allele was found to decrease waist circumference and diastolic blood pressure levels, whereas central obesity parameters were not found to be affected significantly. B₂R gene polymorphism was found to effect diuretics ($p=0.004$), sulphonylurea ($p=0.01$), metformin ($p=0.05$), fibrates ($p=0.004$) frequencies in MS group. In the MS group, the lack of significant association of diastolic blood pressure and genotypes may be due to the low frequency of diuretic drug use.

Conclusion: The B₂R gene 58 T/C polymorphism C allele may be considered to affect waist circumference levels in non-MS, whereas seems to increase glucose levels in MS subjects in nonsignificant level.

O.122 Effects of Sleeve Gastrectomy in High Fat Diet-induced Obese Mice: Respective Role of Caloric Restriction, White Adipose Tissue Inflammation and Changes in Adipose Tissue Depots

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Background: Sleeve gastrectomy (SG) has become a popular bariatric procedure. The mechanisms responsible for weight loss and improvement of metabolic disturbances are still not completely elucidated.

Aim: We investigated the effect of SG on body weight, adipose tissue depots, glucose tolerance, and liver steatosis independently of caloric restriction in high fat diet (HFD)-induced obese mice.

Methods: C57Bl/6J mice fed a HFD (45%) for 33 weeks were divided into three groups: sleeve gastrectomy (SG 10 mice), sham-operated, ad libitum fed (SALF 11 mice) and sham-operated pair fed (SPF 13 mice). The animals were sacrificed 23 days after surgery.

Results: In SG mice, food intake was reduced transiently but weight loss was significant and persistent compared to controls (SG vs. SPF $P<0.05$; SPF vs. SALF $P<0.05$). SG mice showed improved glucose tolerance and lower levels of liver steatosis compared with controls (area under the curve: SG vs. PFS $P<0.01$; PFS vs. SALF $P<0.05$) (liver steatosis: SG vs. PFS $P<0.05$; PFS vs. SALF $P<0.01$). This was associated with a decrease in the ratios of the weight of pancreas, epididymal and inguinal adipose tissues to body weight and an increase in the ratio of brown adipose tissue weight to body weight. Epididymal adipose tissue was also infiltrated by fewer activated T cells and by more anti-inflammatory regulatory T cells.

Conclusion: Reduced white adipose tissue inflammation, modification of adipose tissue development (brown vs. white adipose tissue) and ectopic fat are potential mechanisms that may account for the caloric restriction independent effects of SG.

O.123 Association of Visfatin Rs2110385 Gene Polymorphism with Obesity

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Introduction: Our aim was to evaluate the effects of the visfatin gene rs2110385 polymorphism on obesity in a Turkish study group. The genotype

frequencies of rs2110385 polymorphism in obese patients and non-obese controls were analysed for their association with demographic data, obesity related parameters, drug use, and serum visfatin levels.

Methods: Visfatin gene rs2110385 genotypes were determined with PCR-RFLP and serum visfatin levels were determined micro ELISA method.

Results: The visfatin rs2110385 polymorphism frequencies for wild type (G/G), heterozygous (G/T) and homozygous polymorphic (T/T) genotypes were respectively as 54.1%, 66.7%, 61.8% in obese subjects and 45.9%, 33.3%, 38.2% in non-obese subjects. The genotype frequencies ($2=1.192$, $p=0.551$) and serum visfatin levels ($p=0.365$) did not differ significantly between study groups. The rs2110385 polymorphism was not found to be effective over the antropometric, obesity related (BMI, fat mas, T-cholesterol, TG, HDL-cholesterol, LDL-cholesterol), fasting glucose, systolic/diastolic blood pressure) neither in the obese nor in the non-obese group. In the obese group with T2DM using sulphonylurea and glinide respectively, the rs2110385 polymorphism GG genotype frequencies were found to be higher in comparison to G/T and TT genotypes ($p=0.008$, $p=0.001$). In obese patients with T2DM, the rs2110385 mutation seems to have reduced response to drugs such as sulphonylurea and glinide, whereas has no effect with metformin, acetylsalicylic acid, beta blocker, angiotensin converting enzyme inhibitor and diuretics.

Conclusions: We demonstrate that obese type 2 diabetic patients with homozygous polymorphic rs2110385 genotype may use alternative oral antidiabetic drugs other than sulphonylurea or glinide.

O.124 Low Serum Chromium Levels Correlate with Post-Operative Sugar Craving in Patients Undergoing Bariatric Surgery

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Introduction: Sub-clinical deficiency of S. Chromium in general population due to lower dietary intake is established. However, there is scarce data about S. Chromium after bariatric surgery. There is no data mentioning co-relation of Chromium deficiency and sweet craving.

Materials and Methods: 11 patients undergoing bariatric surgery with complaints of onset of sugar craving few months after surgery and 11 normal persons without sugar craving were included. S. Chromium assay was performed in all. The samples drawn after surgery were between 6 months to 1 year. The prospectively collected results were compared and analysed.

Results: The mean S. Chromium in the post bariatric patients was 0.89g/dl as against 4.89g/dl in normal persons. The difference was statistically significant.

Conclusion: Bariatric surgery may induce Chromium deficiency. Further research and studies may be required to evaluate role of serum chromium and need for supplementation after bariatric surgery.

O.125 Using Ligasure™ vs Harmonic Ace in Laparoscopic Sleeve Gastrectomies

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Introduction: Laparoscopic instruments for vessel sealing are fundamental for the successful conduction of a laparoscopic sleeve gastrectomy. The two more common are the Ligasure (Covidien) and Harmonic Ace (Ethicon Endo-surgery).

Patients and Methods: Patients with intention to undergo laparoscopic sleeve gastrectomy for morbid obesity were randomized for using the

Ligasure or the Harmonic Ace during the operation. An experienced single surgeon conducted all the operations. Demographic data and data which concerned the operation and postoperative period for approximately 3 months were gathered and statistically analyzed. The differences of the two laparoscopic instruments were assessed.

Results: The analyses revealed that overall 55 patients were prospectively randomized in a 10 months period. In 21 patients the Ligasure™ and in the rest 34 patients the Harmonic Ace was used. The two groups had no significant differences concerning the age, gender, BMI, previous operations and the operation time. The group of patients where the Ligasure™ was used had statistically significant increased intraoperative minor complications (40,9% vs 14,3%, p= 0,031) and less postoperative minor complications in comparison with the Harmonic Ace (0% vs 22,9%, p=0,018).

Discussion: The two laparoscopic sealing instruments had a non statistical difference with the operation time but Ligasure had more minor intraoperative complications, such as hematoma, hemorrhage than the Harmonic Ace.

O.126 Laparoscopy Sleeve Gastrectomy: 220 Cases in a Comparative Study with Three Buttressing Methods Applied On Stapler Line

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Introduction: The staple line (SL) suturing after sleeve gastrectomy has not been standardized and we have found in the literature controversial opinions. The goals of this prospective non randomized study is to compare three techniques of reinforcing of SL and to analyse the results in terms of post-operative leaks.

Method: Between January 2010 and January 2012, 220 consecutives non randomized patients, have undergone a sleeve gastrectomy.

They were enrolled in three groups: group A (n=60) SL suturing with a X of type 1 steak (monocryl 2/0), group B (n=80) SL suturing with an over sewing of type 2 steak (V-loc 90), group C (n=80) SL glue vaporisation with evicel 2 5 ml spray.

Results: The operating time has not decreased with the glue utilization with a hospital stay time of 10 days, the same in both groups. A SL haemorrhage needed a surgical re-operation for haemostasis in the group B. In the group C (glue) we have found a significant difference about a shorter time in the operating time (no suturing time).The leaks rate have been found in 6.4 vs 5 vs 6.2% in group A,B, and C and the haemorrhages rate has been 0% vs 1.5% vs 0 % (view the table with mean and standard deviation).

Conclusions: The questionnaire's results has showed a better manageability of the type 2 steak, although it has not showed real advantages in the post-operative complications. The glue applications has permitted a significant reduction of the operating time. The mean of hospital stay time is the same in the three groups. In conclusion there's no significatives differences between the three SL reinforcing techniques in terms of leaks complications.

	Group A	Group B	Group C
	Type 1	Type 2	type 3
	Monocryl	V-loc™ 90	Evicel glue
	n=60	n=80	n=60
BMI	44,6+/-7,7	44,2+/-6	44,1+/-6,6
Age	34,4+/-11,3	38,4+/-13	35,7+/-9,5
ASA	2+/-0,2	2+/-0,2	2+/-0,2
After LAGB (number)	4	6	3
Stapler Cartridges (number)	6,1+/-0,7	6,2+/-1	6,4+/-0,7

Total operative time (min.)	143,3+/-27,6	142+/-34,9	112,1+/-31,1
Stomach section time (min.)	23,6+/-8,6	26,1+/-10,5	23,3+/-11,1
Stomach buttressing time (min.)	30,8+/-9,8	23,8+/-8,5	ND(3+/-1.3)
Hospital stay time (days)	10+/-6	10+/-3	10+/-8
Fistula (%)	6.4	5	6.25
Haemorrhages	0	1.25	0
Stenosis	1.6	2.5	0

Table: Main outcome measures. Results with mean, range, min, max, standard deviation (SD) of the three groups. Age, BMI (Kg/m2), ASA, sleeve gastrectomy after LAGB, stapler cartridges,total operative time, stomach section time (min.), stomach buttressing time min), hospital stay time (days), leaks of SL(%), haemorrhage of SL(%), stenosis (%).

O.127 Sleeve Gastrectomy in the Awake Patient; Is it Feasible?

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Introduction: Sleeve gastrectomy is being performed with increasing frequency in the world for the treatment of morbid obesity. General anesthesia carries a significant risk especially in the obese individual. We presented in this study our initial experience in 20 patients who underwent sleeve gastrectomy under block anesthesia.

Patients and methods: We reviewed retrospectively 20 patients who underwent sleeve under block anesthesia from May2010 till May2012. We studied the conversion rate, mortality, morbidity, EWL and the resolution of comorbidities at 20months of Follow up.

Results: the conversion of block anesthesia to general anesthesia was 0% in our serie; however in one case we aborted the procedure because of severe buttock pain. We reoperate the patient after 2 days and it was completed successfully under block anesthesia. The overall mortality, morbidity, EWL and resolution of comorbidities matched the sleeve gastrectomy results done under general anesthesia published in the literature.

Conclusion: Early results of sleeve gastrectomy done under block anesthesia are encouraging, however more cases and more long term follow up is needed to judge the safety and outcome of this technique.

O.128 Laparoscopic Sleeve Gastrectomy on a Bilateral Lower Limb Amputee – Why is it Definitely Worth Doing?

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Introduction: Lower limb amputation is a significant risk factor for increased cardiovascular disease and diabetes mellitus. Bilateral lower limb amputees have a 2.4 times higher mortality. A key factor is the high rate of obesity; however, quantifying this risk is complex. Weight reduction poses a difficult challenge for these patients.

Method: We present a case of a 38 year-old woman with a BMI-44 who underwent bilateral lower limb amputation following a road traffic accident approximately 13 years ago. She had failed to lose weight by dietary modifications or weight-loss medications. She was however very motivated, knowledgeable on the risks of her obesity and was willing to work closely long-term with our bariatric services. She had an uneventful laparoscopic sleeve gastrectomy.

Results: She was followed up closely by the team including surgeon, Physician and the dietitian. At one year post-op, she had lost 65 % excess body weight. More importantly, the weight loss has enabled her to become clinically eligible for bilateral lower limb prosthesis.

Conclusion: The precise pathophysiology of increased health risk in bilateral lower-limb amputees is not fully understood, however obesity seems to play a major role. There has also been much discrepancy on the validity of BMI in patients with lower limb amputations. We propose therefore that these are a unique group of patients and bariatric surgery should be strongly considered for them in order to provide a safe and effective method of weight loss and reduce their life-time risk of morbidity and mortality.

O.129 The Effect of Sleeve Gastrectomy on Gastroesophageal Reflux

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Introduction: An increasing number of patients undergoes laparoscopic sleeve gastrectomy (LSG) as surgical treatment for morbid obesity. Despite its positive effect in terms of weight reduction, some patients develop gastroesophageal reflux symptoms postoperatively. The pathogenesis of these symptoms is not completely understood. This is the first study combining assessment of the lower esophageal sphincter (LES) function and esophageal motility with measurement of esophageal acid exposure before and after LSG.

Method: In a prospective study patients underwent esophageal function tests (high-resolution manometry and 24-hour pH-metry) before and three months after LSG. Pre- and postoperative symptoms were assessed using the Reflux Disease Questionnaire (RDQ)

Results: In total 20 patients (4 M / 16 F), mean age 43 ± 12 years, weight 137.3 ± 25 kg and BMI of 47.3 ± 6.1 kg/m², participated in this study. The RDQ symptom score before and after LSG increased from 8.4 to 12 (frequency) and from 9.2 to 13.1 (severity). The mean LES pressure decreased from 18.3 ± 9.2 to 11 ± 7 mmHg ($p=0.02$). Esophageal acid exposure increased significantly after sleeve gastrectomy: upright reflux increased from 5.2 ± 4.5 % to 12.6 ± 9.8 % ($p=0.003$), supine reflux from 1.3 ± 2.4 % to 11 ± 15 % ($p=0.003$) and total reflux from 4.2 ± 3.5 % to 12 ± 10.4 % ($p=0.005$).

Conclusions: Patients after LSG experience more frequent and more severe reflux symptoms and have significantly greater esophageal acid exposure. This might be due to a decrease in LES resting pressure.

O.130 Long-term Results of Sleeve Gastrectomy

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Introduction: Our objective was to evaluate the efficacy and safety of Sleeve Gastrectomy (SG) at 5 years follow-up.

Methods: From 2005 to 2007, 65 patients underwent a SG. Percentage of EWL and EBL, as well as comorbidities and complications were evaluated at 2 and at 5 years post SG.

Results: A complete record was obtained for 53 patients (82%) including 45 patients who only have had a SG and 8 who have had a second bariatric

procedure (5 gastric bypasses, 3 re-SG). The mean %EWL of 53 patients was 54.4% at 2 years and 53.7% at 5 years; the mean %EBL was 61% at 2 years and 60% at 5 years. Three patients (5.7%) have had postoperative complications (2 fistulas, 1 hemorrhage). The analysis of the subgroup of 45 patients who only have had a SG found a mean %EWL of 57.1% at 2 years and 50.7% at 5 years; the mean %EBL was 64% at 2 years and 56% at 5 years. For these 45 patients we found a favorable evolution of comorbidities: diabetes decreased of 61.5%; hypertension decreased of 55.5%; dyslipidemia decreased of 58.3%; SAS decreased of 75%. But GERD was observed in 5 patients (11.1%) preoperatively and in 15 patients (33.3%) at 5 years post SG (increase of 200%)

Conclusions: At 5 years post SG, weight loss and reduction of comorbidities were satisfying. The rate of complications was low but the frequency of GERD was increased.

O.131 Long-term Results of Sleeve Gastrectomy in Lower Body Mass Index (30–35) Korean Patients

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Introduction: In Asia, laparoscopic sleeve gastrectomy (LSG) is the leading weight loss procedure for treating morbid obesity. However, long term results of the isolated LSG which was performed in lower body mass index (BMI) (30–35) are sparse.

Methods: We retrospectively reviewed 75 patients who underwent LSG in lower BMI (30–35) from January 2003 to January 2013. Seventy one of these patients had more than 6 months of follow-up, and they are subjects of this report. LSG was performed laparoscopically using Endo-GIA stapler to create a lesser curve gastric tube over a 48-Fr bougie. Since 2007, 36-Fr bougie has been used for resection, and continuous sero-serosal suture at resection margin has been added. The longest follow up time is 90 months.

Results: The age before surgery was 33.7 ± 10.3 . The mean weight and BMI before LSG were 85.7 ± 9.0 kg and 32.4 ± 1.6 kg/m². The percentage of excess BMI loss (%EBMIL) in the postoperative first, third, fifth, and seventh year was 84.1 ± 25.5 , 78.3 ± 31.0 , 76.0 ± 28.5 , and 61.8 ± 34.5 . However, the follow up rate is decreased by postoperative time. The follow up rate in third year is 71.8% and fifth year is 42.9%. There was no 30-day peri-operative mortality and major complications including bleeding and leakage.

Conclusion: These findings show that LSG is an effective and safe weight loss option for lower BMI Korean patients. The randomized prospective control study between gastric banding and LSG, or gastric bypass and LSG are needed to confirm long-term weight loss effect and safety of LSG.

O.132 Is Sleeve Gastrectomy a Good Second Procedure After Gastric Banding?

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Introduction: S.G. is being established as the most recent successful restrictive procedure. G.B. has been reported to be associated with an incidence of inadequate weight loss results among different bariatric procedures. Some G.B. patients are looking for a more successful second procedure.

Methods: 30 consecutive G.B. failures were operated laparoscopically for band removal & immediate S.G. by one surgical team. Intra. & post-operative complications were recorded. Weight loss results are reported. Pre. & post-operative nutritional behavior assessment were recorded.

Results: S.G. was performed in the same session laparoscopically with band removal in 28 cases. Two cases had to be performed 3 months later. Operating

time & hospital stay were longer than primary S.G. patients. As regards weight loss & the drop in BMI & the % loss of excess of body weight at 12 months was only satisfactory in 30% of patients this is obviously correlated with eating behavior study.

Conclusion: The unsatisfactory weight loss results in about 60% of the patients were clearly in patients who had had inadequate results with the primary band procedure with sweet eating behavior. It is very important to achieve good weight loss results with S.G. as a second procedure to select patients who were successful with the primary band and need a second procedure for mechanical band failure or band infection & band slippage.

O.133 Feasibility and Safety of Staged Laparoscopic Sleeve Gastrectomy as a Revision Procedure for Complicated and/or Failed Laparoscopic Gastric Banding

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Introduction: The aim of this study is to evaluate the safety and feasibility of staged laparoscopic sleeve gastrectomy (LSG) as a revision procedure for laparoscopic gastric banding (LGB).

Method: Data was collected prospectively and revised retrospectively from 2009 to 2012. Thirty two patients were included, (28 women and 4 men), with a mean age of 43.4 (range 27–59) and mean preoperative BMI 41.96 (range 27.2-59.1). Indications for LSG included twenty patients with insufficient weight loss (62.5%), seven with slippage (21.9%), four pouch formations (12.5%) and one band erosion with pouch formation (3.13%). LSG was performed as a two stage procedure. During the first stage, the gastric band was removed, repair was undone and capsulectomy performed. After three months (range 3–20 months), patients underwent LSG successfully without any conversion. Stapleline was reinforced with buttressing material, omental patches and tissue glue. Due to the considerable persisting inflammatory response in three patients, the LSG was postponed for a further 3 months.

Results: Mean operative duration was 112.2 minutes (range 60–190 minutes). Bougie size utilised ranged from 32–40 (average 34.69) and antrum size 2–3cm. Additional surgery performed included 25 hiatus hernia repairs, 23 adhesiolysis and one port site hernia repair. There were no intra or postoperative complications encountered. Mean percentage excess weight loss was measured at 3, 6, 12 and 24 months and was 28.86%, 53.32%, 72.42% and 43.76% respectively.

Conclusions: Staged LSG as a revision procedure for failed/complicated LGB is safe and feasible.

Further studies are needed to assess long-term weight loss.

O.134 Rate of Reoperation After Sleeve Gastrectomy at 5 Years

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Introduction: Even if irreversible and with severe early complications, laparoscopic sleeve gastrectomy (LSG) has gained wide acceptance in bariatric surgery but late results and revision's rate are still unknown.

Method: We started LSG in December 2001 in a frame of a two stages BPDDS. So far 213 patients had their LSG performed for more than 5 years (151 primary SG, 62 revisional after gastric banding). All patients were asked to attend quarterly surgical consult at least for the 3 first years and then after at least once a year.

Results: Rapidly it appears to us that most patients will not need the additional DS. Currently, additional DS is planned in heavier patients with curable persisting comorbid conditions, conversion to R-en-Y bypass for intractable GERD or complication and resleeve for weight regain with stomach enlargement. So far only 2 patients had a resleeve at 7 years in this series.

Conclusion: At 5 years, Isolated Sleeve gastrectomy provides excellent WL. The rate of additional DS 12.7 % is overestimated because of our initial policy, rate of conversion to R-en-Y bypass remains to be defined as well as the rate of resleeve which is low and late in our experience.

213 patients	Reop within 5 Y		At 5 Y Remaining With isolated SG				%EBMIL
Pre op BMI	Added DS	Conversion to bypass	Missing for FU	Excluded*	Remaining SG	Drop in BMI ± SD*	
44.6	27	4	19	7	155	14±5	75.8±26.5
34.6-67.6		For GERD					
		For chronic leak					

O.135 Prevention of Complications After Laparoscopic Sleeve Gastrectomy: What Have We Learned After 1300 Cases

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Laparoscopic sleeve gastrectomy (LSG) is recognized as a consensual bariatric procedure that may be proposed to treat morbid obesity. The bariatric team of Montpellier University Hospital, that has performed more than 1300 cases since 8 years, describes in this article the evolution of the technical key points for LSG procedure in order to propose the most effective procedure and decrease the rate of complications. Operative technique: The dissection along the greater curvature starts around 6 cm from the pylorus and progresses towards the His angle. The gastrosplenic and gastrophrenic ligament are dissected until to reach the

lower part of the left crus. All the posterior attachments of the Fundus and the body of the stomach are released in order to remove the most important volume of stomach. Then a specific gastric calibration tube of 36 French (MIDSLEEVE MID) that has been previously be inserted trans-orally in the oesophagus is placed along the lesser curvature to perform a controlled vertical gastrectomy. When the balloon of the MID SLEEVE is in the correct position, the stapler is inserted by the 12 mm trocar and closed parallel to the gastric tube. Then the balloon of the MIDSLEEVE is disinflated by the anaesthesiologist and the tube is mobilized (2 cm up and down) to check for the lack of complication (stenosis, tube stapled) **This step will be systematically performed before each staple.** The stapling line is checked for leakage by injecting methylene blue through the MIDSLEEVE (100cc), and for bleeding with the use of bipolar cautery or simple suture (vicryl 3/0). Since 2011, we reinforced the staple line by 1,5ml of cyanoacrylate glue (IFABOND, VITALITEC) in order to avoid the risk of leakage. A suction drain (Redon type) of 16 mm is left in the left upper quadrant to check for bleeding in Intensive Care Unit. **All the patients**

receive peri-operative deep vein thrombosis prophylaxis using low molecular weight heparin (LOVENOX 40mg 2/day). Furthermore, a sequential compression device (Covidien Kendall SCD) is set at the beginning of the procedure and removed at day 1 for early mobilization (compression stockings are given for ten days)

O.136 Laparoscopic Gastric Bypass versus Sleeve Gastrectomy: Early Comparative Results

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Introduction: Laparoscopic gastric bypass and sleeve gastrectomy are the most common bariatric procedures. This study is to compare the early results of the laparoscopic gastric bypass and sleeve gastrectomy in tertiary hospital.

Method: This is a retrospective review of the records of all the patients who have underwent laparoscopic gastric bypass and sleeve gastrectomy in a period of one year, i.e. first of October 2011 to the end of September 2012. The same surgeon operated all the patients.

Results: 406 bariatric operations were done in this period, 219 operations were laparoscopic sleeve gastrectomy (LSG) and 140 operations were laparoscopic gastric bypass (LGB). The average age of LSG group was 31.2 years while the average age of LGB group was 33 years. The BMI of LSG and LGB were 42.5kg/m² and 49.4kg/m² respectively. All the operations were laparoscopic and there were no conversion to open. There was no mortality in both groups. There were 3 leaks in LSG while only one leak in LGB. There were 2 patients reoperated in LSG group for infected collection both were after two weeks from primary operation while only one patient in LGB group was reoperated after two weeks for infected hematoma in the pelvis. The excess body weight loss after 3 months for LSG and LGB were 41% and 34.7% respectively. The compliance of the both groups in the first 3 months post operation was only 92%.

Conclusions: Both LSG and LGB are safe operations with low rate of complications. The LSG have showed a tendency for higher rate of leak with longer time to cure. The excess body weight loss in the early post operative period is slightly higher in the LSG group in this study.

O.137 Insulin Resistance and Beta-Cell Function in Obese Patients with Type 2 Diabetes Before and After Sleeve Gastrectomy: Ameliorating Glucose Tolerance by Reduction of Insulin Resistance Up To 24 Months of Follow-Up

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Introduction: Sleeve gastrectomy is a novel technique for the treatment of morbid obesity. Its effects on the metabolic syndrome and type 2 diabetes (T2D) are not yet fully understood. We determined insulin resistance (IR) and beta-cell function (BCF) to assess how sleeve gastrectomy favors the improvement of the metabolic state in type 2 diabetes.

Method: From June 2007 to July 2010, sleeve gastrectomy as stand-alone treatment for severe or morbid obesity was performed in 23 patients with T2D or impaired fasting glucose (IFG). Fasting glycemia, serum insulin levels and glycosylated hemoglobin were determined before and up to 24 months after surgery.

Results: Ten patients suffered from T2D (fasting glucose 126 mg/dl) and 13 patients presented with IFG (100 mg/dl – 125 mg/dl), mostly associated with high fasting insulin levels. Three diabetic patients had an impaired BCF (<40% of expected value). In 16 patients (69.6%), IR was more than twofold increased (modified HOMA-IR). At 24 months, a

normal fasting glucose level was maintained in 13 of 16 patients (5 patients lost to follow-up, 2 patients without values) and IR returned to normal 86.7%; two diabetic patients with impaired pre-operative BCF presented with glycosylated hemoglobin > 6.5%. Average excess weight loss at 24 months was 81.7% (± 20.9%).

Conclusion: In obese patients with T2D or IFG submitted to sleeve gastrectomy, improvement of metabolic state is mainly due to reduced insulin resistance up to 24 months of follow-up. Recovery of beta-cell function probably does not contribute significantly to ameliorate type 2 diabetes.

O.138 The Effects of Laparoscopic Sleeve Gastrectomy on Postoperative Erythrocyte and Haematitic Indices at 1 Year

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is thought to alter iron and B12 absorption, which may affect erythrocyte synthesis resulting in anaemia. This study investigates changes in erythrocyte and haematitic indices following LSG, and the effect of iron and vitamin B12 supplementation.

Methods: A single-centre, retrospective analysis was conducted on patients who underwent LSG (n=42) between July 2009 and October 2011. Outcomes were anaemia (Hb<12 in females and <13 in males), haemoglobin (Hb, g/dl), mean corpuscular volume (MCV, femtolitres/cell), mean corpuscular haemoglobin (MCH, picograms/cell), ferritin (ng/ml), B12 (picograms/ml), and folate (ng/ml) levels at 12 months.

Results: 25 patients (60%) received both iron and B12 supplementation post-operatively, whilst 6 (14%) received iron only, with none (0%) receiving B12 only. Hb (13.9 vs. 13.7), ferritin (102 vs. 136), MCV (90 vs. 93), and folate (6.2 vs. 9.8) did not significantly change at 12 months. There were significant increases in MCH (30 vs. 31, p=0.02), B12 (387 vs. 659, p=0.01), and iron (10.1 vs. 14.4, p=0.02) at 12 months. Non-receipt of iron did not lead to microcytic anaemia (0% vs. 0%) or result in significant changes in ferritin (120 vs. 123), and iron (15.2 vs. 8.6) at 12 months. Non-receipt of B12 was not associated with macrocytic anaemia (0% vs. 11%), B12 deficiency (0% vs. 0%), significant changes in B12 (493 vs. 393) at 12 months.

Conclusions: These preliminary data throw doubt as to the need for routine iron and B12 supplementation after LSG. A larger study population with longer follow up is required.

O.139 Liver Transplantation and Bariatric Surgery

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Introduction: Obesity is a major problem for patients after liver transplantation (LT). Almost one patient over three becomes obese after the transplantation and their survival is considerably reduced. Very few studies report about bariatric surgery (BS) and liver transplantation. We present our series and a systematic review.

Methods: All studies published up to December 2012 were included if they were full papers in refereed journals published in English, reporting about bariatric surgery before, during or after liver transplantation. We present our retrospective cohort study on sleeve gastrectomy performed after LT.

Results: We found 7 papers reporting bariatric surgery in 21 patients. Concerning the timing, BS was performed on 67% (17/21) of patients after LT, on 14% (3/21) before, and in one case during LT.

The most common procedure was sleeve gastrectomy (17/21), followed by gastric bypass (3/21) and adjustable gastric banding. Mortality was null and morbidity higher than in non-transplanted patients.

Between 2005 and 2007 we performed 4 sleeve gastrectomies in obese patients after LT. Mean age and BMI were 59.7 (46–66) and 43 kg/m² (39–46) respectively. In average time between BS and LT was 51 months (44–65). Mean excess weight loss was 85% at 12 months.

Conclusion: Obesity is becoming one of the most common indications for LT in western countries but very little is known about BS in transplanted patients. BS seems to be feasible and effective in this population, nevertheless morbidity is high.

O.140 Fistulas in Laparoscopic Sleeve Gastrectomy - A New Classification for a Better Management

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Introduction: Laparoscopic Sleeve Gastrectomy is one of the latest bariatric interventions. The reason of its growing popularity is due to its technical simplicity. Among several occurring post LSG complications, fistula remains the most feared one, necessitating a challenging management. Several classifications were published based on the timing of the fistula occurrence. None of them took into consideration the anatomical type, which is the goal of our review.

Methods: We report in this retrospective observational study of 506 patients, 16 cases (11 personal /5 referred) of post-LSG fistula. According to radiological features we were able to identify 3 types of fistula: type I “leak”, type II “abscess” and type III “fistula”.

Results: The fistula percentage was 2.17%. The diagnosis was radiologically confirmed in all cases after upper gastro-intestinal series and abdomino-pelvic CTscan. The initial treatment was total parenteral nutrition, wide spectrum antibiotics and keeping the patient NPO. This was sufficient for type I leak. Type II abscess was internally or percutaneously drained. In this case early endoprosthesis can be beneficial. Surgery was reserved for failure and for type III.

Conclusion: After reviewing the fistula occurrence in our series, we were able to establish a radiological classification. A precise algorithm for optimal fistula management was proposed.

O.141 Endoscopic Management of Leaks after Laparoscopic Sleeve Gastrectomy: a Tertiary Facility Experience in 33 Patients

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Background: Sleeve gastrectomy has gained acceptance as a stand alone procedure for the treatment of morbid obesity. Leak is the most dreadful complication and its incidence is estimated to be 1-3%.

Methods: 33 patients with leak after sleeve gastrectomy were treated in our hospital. Data were collected retrospectively and included number and type of techniques, complication and success rates.

Results: 97 endoscopic procedures were carried out in 33 patients (average of 2.9 per patient). In 23 patients (69.6%) closure of the fistula was achieved with different techniques. Only 9 cases (39%) were closed after one modality (5 after stent, 4 after clip), 4 cases after 2 procedures, 4 after 3 procedures and the rest after multiple trials. Four patients underwent salvage surgery for failure of endoscopic treatment:

1 total gastrectomy, 1 proximal gastrectomy, 1 gastric bypass and one fistulo-enterostomy. Five patients are still suffering chronic fistula and awaiting further treatment and in the remaining one we have no follow up. The main technique used was stent insertion (22 cases 66%), and was associated with the highest rate of intolerance and complications (mainly migration-86%, pain and vomiting- almost in all patients, and bleeding in 2 patients). Application of clips and glue were uneventful and tolerable.

Conclusions: In our experience, the success rate after endoscopic treatment of gastric fistulas was almost 70%. Most patients needed multiple procedures until closure of fistula was achieved. The most intolerable procedure was stent insertion with a high rate of migration and re-do interventions.

O.142 Gastric Leak After Laparoscopic Sleeve Gastrectomy: Early Covered Stents with String Attachment Reduce Healing Time and Prevent Migration

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Background: Laparoscopic sleeve gastrectomy has become a very frequent procedure in bariatric surgery due to its efficacy and simplicity compared to gastric bypass. Gastric staple line leak (1 to 7% of cases) is a severe complication with a long nonstandardized treatment. The aim of this retrospective study was to examine the success and tolerance of covered stents in its management.

Methods: Two patients with gastric staple line leaks after sleeve gastrectomy were treated with covered stents in our department. The leaks were diagnosed by CT scan and visualized during the endoscopy. Among the studied variables were operative technique, post-operative fistula diagnosis delay, stent treatment delay, and stent tolerance. In our institution, Hanarostent (length 17 cm, diameter 18 mm; M.I. Tech, Seoul, Korea) was used and inserted under direct endoscopic control. In order to prevent distal migration of the stent, string was attached to the proximal end and attached to the ear through nasal route.

Results: Both patients had discomfort due to stents in the first weeks. The drainage was decreased initially however increased gradually. We stopped oral feeding and inserted nasojejunal tube through the stent. After 2 weeks, both patients were uneventful and discharged after extraction of NJ tube and stents.

Conclusion: Covered stents with string attachment, which is a novel technique, reduces healing time and deserves further investigation for sleeve gastrectomy leakage.

O.143 Percutaneous Trans-Esophageal Gastro-Tubing (PTEG) for the Management of Gastric Leakage after Sleeve Gastrectomy

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Background: Gastric leakage is the one of most feared complications that occur after sleeve gastrectomy. Despite using a multimodal approach, including drainage, clipping and stenting of the leakage site, such methods may nevertheless be insufficient in some cases. We herein report the successful management of refractory gastric leakage using Percutaneous Trans-Esophageal Gastro-tubing (PTEG).

Patients and Methods: Two illustrative cases from our hospital are herein presented. A 39-year-old female with a body mass index (BMI) of 39 and a 44-

year-old male with a BMI of 59 underwent open sleeve gastrectomy. Computed tomography (CT) scans with oral contrast revealed staple line leakage near the GE junction on postoperative days (POD) 7 and 3, respectively. In the first case, in addition to performing percutaneous drainage of abdominal fluid, a covered and retrievable stent was placed over the site of leakage endoscopically. However, the stent could not fully function due to stent migration. In the second case, the performance of both laparoscopic drainage and endoscopic stenting improved his condition, but a delayed recurrence of leakage developed 8 months after the operation. Finally PTEG was performed in both patients under local and general anesthesia, respectively. The tip of the tube was placed in the proximal jejunum. Thereafter, enteral feeding was started on the following day.

Results: Both patients were discharged home within one week after the procedure. Oral intake was resumed at 54 and 15 days after the PTEG, respectively. The patients were able to tolerate normal food without any complaints. The tube was removed 96 and 43 days after PTEG, respectively. The patients have both been doing well and also successfully lost weight.

Conclusions: PTEG is considered to be an effective therapeutic option for the management of intractable gastric leakage which occurs after sleeve gastrectomy.

O.144 Stem Cells Therapy for the Treatment of Gastric Fistula after Sleeve Gastrectomy

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Introduction: Gastric fistula occurred in around 2% of sleeve gastrectomy. Several treatments of fistula are available. However there is no consensus in terms of choice of the procedure. Our team tried to open a new way of fistula therapy by the injection of autologous adipose derived stem cells (ADSC) in order to improve cells proliferation and close definitively the fistula.

Case report We relate the case of a 59 years old female, with a BMI 23,4 kg/m² and antecedents of post tobacco bronchiectasia and T2DM treated by pharmacological agent, who underwent laparoscopic sleeve gastrectomy. The gastric tube was realized by stapling of the gastric body and fundus with a Echelon[®] stapler (Ethicon Surgery) (6 gold cartridges) after calibration on a 36 Fr Midsleeve tube (MID Company). At Day 3, the patient presented an acute left side abdominal pain with tachycardia and fever (38,9°C). The CT scan showed a gastric fistula which led to a forward re-operation by laparoscopic approach. Endoscopic evaluation found an infracentimetric hole at the top of the staple line. The fistula was drained after stitching the hole and washing the abdominal cavity. An empiric large spectrum antibiotherapy was initiated immediately.

At Day 7, a control by gastric endoscopy emphasized the presence of centimetric perforation of the oeso-cardial junction with a para-gastric collection of 4,4 cm 1,6 cm. A treatment of fistula by a covered gastric endoprosthesis (Cousin [®]) (18 cm length, \varnothing 24 mm) was then performed but it was removed due to migration of the endoprosthesis. At Day 24, the patient came back at home with parenteral nutrition and an adapted antibiotherapy treatment for 15 days. At Day 41, a new endoscopic treatment by peri-fistula injection of ADSC (Adipose Derived Stem Cells) taken by abdominal liposuction and prepared by centrifugation (Cellution 800/CRS system) after enzymatic lysis by Cealyse[®] (35 mg) according to the Cytori Therapeutic process (San Diego, USA). This treatment was completed by an peri-fistula injection of fat cells in order to add a filling effect. No complications were detected during the follow-up. The drain output had progressively decreased until the stop at Day 60. At Day 75, a control by CT scan showed no fistula and no residual collection. At 4 month, the patient kept a normal oral nutrition and physical activity and the excess weight loss was about 43,7 % (21 kg, BMI 34,6 kg/m²).

Conclusion: As our knowledge, it was the first time that a gastric fistula after sleeve gastrectomy was treated by Stem Cells Therapy. This great result might be the starting point of a new way of research in this field.

O.145 Routine Preoperative Esophagogastroduodenoscopy in Bariatric Surgery Patients: A Single Institution Experience in Mainland China

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Introduction: Some surgeons suggested that esophagogastroduodenoscopy (EGD) could be performed in selected bariatric surgery patients with gastrointestinal tract symptoms. Whether or not it should be the routine examination in asymptomatic patients is still remain controversy. Incidence of gastric diseases in mainland China is high. The aim of this study is to evaluate the role of preoperative EGD in bariatric surgery patients.

Method: Bariatric surgery patients underwent routine preoperative EGD in the First Affiliated Hospital of Jinan University between January 2011 and December 2012 was reviewed. Clinical data, EGD and histopathologic examination results, surgical procedures and related examination cost were analyzed retrospectively.

Results: 105 patients underwent EGD including 57 males (54.3%) and 46 females (45.7%) with mean body mass index 45.1 kg/m². EGD showed 39 cases (37.1%) of normal findings and 66 cases (62.9%) of abnormalities. Biopsy and histopathologic examination were taken in the abnormal cases. The results showed 43 chronic superficial gastritis, 13 peptic ulcer, 11 reflux esophagitis, 7 gastric polyp, 4 hiatal hernia, and 1 gastric stromal tumor. Some patients suffered multiple comorbidities. In the patients with abnormal finding, 43 (65.2%) were asymptomatic and 23 (34.8%) had symptoms of reflux, abdominal pain and dysphagia. Gastric bypass were performed in 65 patients (61.9%) and sleeve gastrectomy in 40 patients (38.1%), including 25 patients (23.8%) underwent concomitant procedures due to the abnormal EGD findings. The cost of EGD and histopathologic examination were approximately USD 40 and USD 160, respectively.

Conclusion: Routine preoperative EGD in bariatric surgery patients has high diagnostic yield at a low cost. It reveals the asymptomatic diseases and helps to make the choice of surgical procedures.

O.146 Prospective Study: The Role of Endoscopy in Patients Who Have Undergone Laparoscopic Roux-en-Y Bypass

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Introduction: Laparoscopic Roux-en-Y gastric bypass is an effective treatment for morbid obesity, however a significant proportion of patients have gastrointestinal symptoms requiring a role for upper GI endoscopy (OGD) as a diagnostic and therapeutic tool in these patients. We analysed the indications and findings of post-operative gastric bypass patients.

Methods: Between April 2010 and December 2012, a total of 427 gastric bypasses were performed at our institution, 53 of these patients presented with gastrointestinal symptoms and were referred for OGD. Indications were abdominal pain in 28 patients, dysphagia in 12 patients, dyspepsia in 5 patients, nausea and vomiting in two patients and cessation of weight loss in six patients.

Results: Twenty eight of the 53 patients had normal findings, seven were diagnosed with gastritis of the pouch and 12 had stoma ulceration. Five patients were found to have a stricture and one patient was discovered to have erosion of his pouch. Consequently, 11 patients had change in their medication, 4 patients received endoscopic dilatation of stricture and 38 had no change in their management.

Conclusion: OGD post bariatric upper GI symptoms results in a useful diagnostic assessment and alters medical management in a proportion of cases.

O.147 Ring Removal by Endoscopic Stenting in RYGB

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Introduction: Ring dysfunction after roux-en-y gastric bypass (RYGB) causing delayed gastric emptying is classically treated by surgery, with risk of complications and weight regain. Self-expandable plastic stents (SEPS) induce intraluminal erosion of the ring, allowing minimally invasive removal. We analyze endoscopic removal of non-eroded dysfunctional silastic rings after RYGB using SEPS.

Methods: This prospective case series included 24 patients with a mean age of 43.2 years, most were female (n=18), median BMI at treatment was 24.5 Kg/m². Most common symptom was vomiting (n=23), with daily occurrence in 52.2%. Stricture was present in 62.5% and ring slippage in 8.2%. When there was severe stricture or ring slippage, a previous endoscopic dilation was done.

Results: SEPS induced complete erosion in 16 cases, allowing simultaneous stent and ring removal (Fig. 1). In the remainder, ring was removed two weeks later, after complete erosion. There was one case of stent migration, which was naturally expelled. Most patients needed endoscopic stricture dilation after stent removal (91,2%). Most common adverse event was vomiting (n=6). There was no early stent removal, and no serious complications. After a mean follow-up of 7 months, there was no significant change in mean BMI, and 75% are able to ingest solid foods (Table 1).

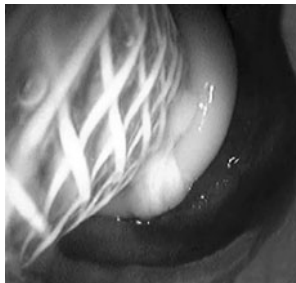


Fig. 1 Endoscopic view of stent and ring completely eroded

Table 1. Description of procedure and follow-up results

Characteristics	n (%)
Dilation before stent placement	13 (54.2)
Stent length of stay in days (mean ± SD)	15.0 (± 6.8)
Simultaneous stent + ring removal	16 (66.7)
Post-stent dilation sessions (median and range)	2.0 (1.0 – 3.75)
Solid food ingestion before stent	0 (0.0)
Solid food ingestion after stent	18 (75.0)
Complications	6 (25.0)
Vomiting	4 (66.7)
Abdominal pain	1 (16.7)
Stent migration	1 (16.7)
BMI variation after stent (median and range)	0.0 (−1.0 – 2.75)
Follow-up in months (median and range)	7.0 (2.25 – 13.5)

Conclusion: Endoscopic stents led to ring intraluminal erosion in 100% of subjects, allowing successful removal of dysfunctional rings. The procedure is technically feasible and safe, with a 25% occurrence of mild adverse events and no serious complications. It avoids surgery and decreases the possibility of weight regain.

O.148 Management of Gastro-Cutaneous Fistulas Using Endoscopic Fibrin Sealant (Tisseel) - Our Experience

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Introduction: Laparoscopic bariatric procedures effectively treat obesity and related co-morbid conditions. Sleeve gastrectomy and Roux-en-Y gastric bypass (LRYGB) involve gastric resection and anastomosis respectively. Staple line or anastomotic leaks are feared complications as they are potentially life-threatening and may lead to fistula formation. The management of fistula could be very lengthy and difficult. We investigated the use of fibrin sealant (Tisseel) endoscopically to treat post-bariatric surgery fistulae.

Methods: We analyzed our prospectively collected data from October 2009 until March 2013. The diagnosis of gastro-cutaneous fistula was confirmed on Gastrograffin study/endoscopy. Patients were treated endoscopically with Tisseel injection at the site of entero-cutaneous fistula.

Results: We performed 523 bariatric procedures during the above period, of which 50 were sleeve gastrectomy and 319 were LRYGB. A total of 19 (3.63%) patients developed leak post-operatively. Seven patients went on to develop established gastro-cutaneous fistulae (1.34% overall and 36.8% leaks). Re-surgery rate on them was 42.9 % and Mortality from the post-op leaks was 0.57% overall (15.79% of leaks). Seven patients had stent inserted and all needed removal in a few weeks. Of these 7 patients underwent endoscopic injection of Tisseel (1–5 applications). There was no mortality or procedure-specific morbidity following Tisseel injection. There was a clear and immediate reduction of fistula-output after each application until the fistula closed.

Conclusion: Our results suggest that Tisseel is an effective and safe option for management of fistula following bariatric-surgery and can be repeatedly used. It is a good alternative for endoscopic stenting with minimal associated risks.

O.149 Early Bariatric Surgery Set-up –Results, Complications & Progress for Beginners

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Introduction: Obesity is rapidly growing worldwide & has been declared a progressive epidemic disease worldwide. More & More younger generation surgeons are opting for bariatric surgery practice in view of growing obesity worldwide. Sharing our early experience during the beginning of the bariatric practice in India, evolution of Laparoscopic sleeve gastrectomy (LSG) disappearance of Laparoscopic adjustable gastric band (LAGB) complications encountered for a beginner, results of operated patients & further progress of bariatric surgery programme have been discussed in this study.

Material & Methods: This study was conducted on 200 obese individuals who had undergone bariatric surgery for treatment of obesity in & around our centre from November2008-December2010. All procedure namely LAGB, LSG, Roux-en-Y Gastric bypass (RGB) were performed.

Results: 200 patients underwent bariatric surgery procedures females140(70%), Males60(30%). More than 50% patients had associated co-morbid conditions along with obesity. The overall excess weightloss in most of the patients was more than 50%. The complications encountered per-operatively like perforation of oesophagus

in two (1%), Deep vein thrombosis, one (0.5%), failure of weight loss four (2%) patients, postoperative haemorrhage requiring blood transfusion five (4.5%), revision surgery for weight loss failure three (1.5%) patients, massive bleeding leading to haemorrhagic shock from optical trocar injury & abandoning of procedure one (0.5%), severe infection with discharge from port site in LAGB two (1%), Malena episodes in one (0.5%) in RGB.

Conclusion: (1) Bariatric surgery Programme is a multidisciplinary field which demands to be followed under strict guidelines for starters who opt for it. (2) Can cause a high complication rate if not performed under a planned, tried & tested protocol for beginners.

O.150 Gastric Banding and Its Effects of Oesophageal Physiology

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Introduction: Morbidly obese patients have a higher incidence of gastro-oesophageal reflux disease (GORD) compared to the general population and also have more abnormalities in oesophageal manometric findings. Gastric banding (GB) may further interfere with functions of the lower oesophagus

Method: A systemic review of the literature was performed to investigate changes in oesophageal symptoms and physiology after GB insertion.

Results: 15 studies were found in the literature that fitted our criteria. The studies showed heterogeneity in patient number, length of follow-up, technique and band employed and investigations (questionnaires, radiological contrast studies, endoscopy, pH studies and manometry) used to assess change in oesophageal function. 13 of these studies assessed all patients who had undergone GB while 2 of the studies only included patient who were symptomatic or had poor weight loss after GB. Evidence of oesophageal dilatation was present in 7.5 to 56% of patients in the literature. The incidence of reflux symptoms also varied greatly with some studies showing improvement, others no change and some worsening of GORD. Four studies evaluated oesophageal manometry in patients pre- and post GB. 2 of these studies showed no change in oesophageal motility while the other 2 showed weaker peristalsis and contractions in the lower oesophagus after GB. Pressure at the lower oesophageal sphincter (LES) was either unchanged or increased post-op.

Conclusion: The literature is still controversial regarding the effect of gastric banding on gastrooesophageal reflux and oesophageal motility. Patients with pre-existing LES insufficiency may be at increased risk for pouch and oesophageal dilatation.

O.151 Endoscopic Removal of Migrated Adjustable Gastric Band, Treatment of a Complication

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Introduction: Obesity is an important health issue due to recently increased incidence. With unsatisfying results of exercise, diet and medical treatments for obesity in long-term surgical treatment modalities were developed. Nowadays, most commonly performed surgery is laparoscopic adjustable gastric banding, and migration of gastric band is a common complication, which occurs 0.6–11% in first two post-operative years.

Method: From January 1993 to December 2012, 2750 patients underwent to laparoscopic adjustable gastric banding. Ten patients in whom gastric band migration was developed treated with endoscopic removal of adjustable gastric band using gastric band cutter device.

Results: Three patients were male and seven were female. Migration of gastric band was developed 2+00.94 (1–4) years after laparoscopic implantation of the

gastric band. Mean duration for development of migration was 2.67±1.15 years for males and 1.71±0.75 years for females ($p=0.153$). Mean age was 31.4±6.35 (23–40) years and duration of procedure was 90±34.80 (60–180) minutes. Mean age was 27.33±2.08 years for males and 33.14±6.87 years for females, mean duration of procedure was 115±56.79 minutes and 79.29±17.18 minutes respectively which are statistically not differs for each gender ($p=0.078$ and $p=0.39$ respectively).

Conclusion: Gender has no effect on time to migration of gastric band and endoscopic removal of migrated gastric band with cutter. Migrated gastric band can be successfully removed by use of endoscopic gastric band cutter.

O.152 Intestinal Obstruction due to Intraluminal Gastric Band Migration: An Uncommon but Challenging Complication

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Introduction: Laparoscopic Adjustable Gastric Banding (LAGB) is still the most popular restrictive bariatric surgical technique globally. These has been early and late complications identified after application of this technique. Gastric band migration is one of the late complications and rarely can be presented as intestinal obstruction.

Aim: Here in we present our experience in management of intestinal obstruction caused by a migrated gastric band after LAGB surgery.

Materials and Methods: Between 1996–2012, 2750 cases of LAGB surgery was done in our clinic. We have retrospectively analyzed the complications and found out 3 cases of gastric band migration which caused obstruction in the distal ileum.

Results: All the patients presented with abdominal pain, nausea and vomiting to Emergency department. There was 1 male and 2 female patients. The mean age of the patients was 42.6 years. In the abdominal X-Rays and abdominal CT scans air-fluid levels and distended proximal jejunal segments were observed. Also migrated gastric band was seen in the distal ileal segments. The complications was seen earliest in two years in one patient and latest after 7 years in the other. The 2 patients were managed laparoscopically and in one patient band was removed via laparotomy and enterotomy. All the patients were discharged uneventfully after the surgery.

Conclusion: Although LAGB is a simple procedure requiring less hospital stay and can be done in outpatient setting, long term followup and management of serious complications such as intestinal obstruction due to band migration should be always kept in mind.

O.153 Novel Restrictive Procedures - Laparoscopic Greater Curvature Plication - Results From 532 patients

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Background: Laparoscopic greater curvature plication (LGCP) is relatively new bariatric/metabolic restrictive procedure. It does not require GI resection, intestinal or gastric bypass, and/or use of implantable device. From 2010–2012 >500 LGCP procedures were performed by our team.

Methods: From January 2010 – December 2012, all LGCP patients were prospectively evaluated. Changes in Body mass index (BMI, kg/m²), excess BMI loss (%EBMIL), excess weight loss (%EWL), complications, and influence of LGCP on type 2 diabetic patients (T2DM) were recorded on 6 and 12 months basis.

Results: Out of the 532 patients available for follow-up, female: male ratio was 4:1, mean age 46.1±11.0 years, pre-op BMI (±SD) 41.4±5.5. 68 [27.9%]

patients were T2 diabetics. At 6 months after LGCP (n=105), BMI decreased to 36.1±4.7, %EBMIL reached 34.8±17.3, and %EWL 31.8±15.9 (p<0.001). At 6 months significantly greater WL was achieved in patients with pre-op BMI <40, in comparison with those with BMI 40. However, from 9 months onwards no significant weight loss difference occurred. In patients with preoperative BMI <40, 18-month %EWL approached 50% and %EBMIL exceeded 50%. At 6 months, 96.9% of patients' T2DM was significantly improved/resolved.

Conclusions: Short to mid term LGCP results suggest its effectiveness in WL as well as significant positive influence on T2DM reduction. The procedure has a low rate of complications. However, before more and longer term results are available LGCP should be performed in high volume, dedicated bariatric centers, under a close and strict follow-up protocol.

O.154 Long Term Results after Sleeve Gastrectomy

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Background Since its evolution in 2003 the Sleeve Gastrectomy entered the bariatric community and has become one of the most favoured standard procedures in the field of bariatric surgery. Already the Metanalysis of Buchwald in 2009 showed an expansion from 0% up to 5.3% and seems nowadays a more frequent procedure than even the well-established adjustable gastric banding. On the other hand only few long-term studies are available, but studies with high volume follow-up from Austria suggest that a worse outcome in a 5 years period than expected, not only in respect of weight loss success but also in conversion rates due to side effects.

Methods: In our high volume center 1324 primary sleeve gastrectomies have been performed in between 2001 and 2010, the number has even increased up to 2536 cases up till now. We performed a retrospective analysis of 68 patients from our beginnings in 2007, which have been operated in a standardized way by one experienced surgical team to exclude the learning curve. 15 patients had previous balloon treatment to lower operative weight and we had a 52.47% rate of male patients. Mean BMI was 54.48±12 and mean age was 42.47 years. Comorbidities were present in 38 patients; there were 38 patients with hypertension, 23 pts with diabetes type 2 and 16 pts with sleep apnea. All patients were monitored for their regular follow-up after 1,3,6 and 12 months as well as yearly follow-up.

Results: Regular follow-up decreased dramatically after the 2 years period, telephonic updating was necessary. We found that in 23.5% of the patients were converted into another surgical procedure, thereof 8.8% into a standard Roux-en-Y-Gastric Bypass and 8.8% into a BPD-DS. 9 patients experience early complications (leakage and bleeding), but the most important finding was that an increase in weight could be found after a period of 2 years.

Conclusion: Sleeve Gastrectomy is to be considered as a surgery with high conversion rate and high rate of weight regain within the 5 years period and therefore patients selection is currently underestimated for this procedure. Further investigation is needed but our results might indicate that sleeve gastrectomy is not to be considered as a sole standing procedure in every patient.

O.155 Laparoscopic Gastric Bypass in a Patient with Situs Inversus Totalis and a Literature Review of Obesity Surgery in Patients with Situs Inversus

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Background: Situs inversus is a rare recessive congenital condition in which the major visceral organs are mirrored from their normal positions. The incidence has been estimated to be 1/8000.

Methods: We report a case of a morbidly obese female patient with a BMI of 41 with situs inversus totalis diagnosed during routine work-up. We performed a laparoscopic Gastric Bypass with hiato-plasty using a mirror image technique.

Results: The procedure was the exact mirror image of patients with a normal anatomy. The operative time was 65 minutes, i.e. not longer than in "normal" bypass. There were no perioperative or postoperative complications.

Discussion: We reviewed the worldwide laparoscopic bariatric experience with patients with situs inversus. Ten other cases have been described. An incidental situs inversus should be diagnosed during the preoperative investigations, by abdominal ultrasonography for example.

Conclusion: A laparoscopic approach for obesity surgery in patients with situs inversus is feasible using conventional technique.

O. 156 Complications of Laparoscopic Gastric Bypass

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Introduction: The laparoscopic approach has changed significantly bariatric surgery. Over the years the laparoscopic gastric bypass has been accepted as a gold standard technique of bariatric surgery.

Objective: We present our series of intraoperative and postoperative complications of gastric bypass.

Material and Method The bariatric surgery program at our center began in 1991, 800 patients have been operated, beginning in 2008 laparoscopic approach since 107 patients underwent gastric bypass and performed antegastric-retrocolic technique in most cases.

Results: During the surgical procedure there are situations that can cause critical concern of the surgeon. These difficulties due to the characteristics of morbidly obese patients and technical failures. These include the difficulty of afferent loop ascent through the mesocolon, sometimes not possible and must perform an upgrade antegastric bypass, loop injury, liver injury, difficulty performing gastric reservoir and failure of staplers. Our rate of postoperative complications included anastomotic leak (5.8%), bleeding complications (2.9%) obstructive complications (2.9%).

Conclusions: Gastric bypass is one of the most complex laparoscopic surgeries and is associated with a number of typical complications.

O.157 Maladaptive Eating Behaviour Should Not Lead to Denial of Bariatric Surgery for the Obese

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Eating behavior is a surrogate evidence of the hunger and satiety. Bariatric surgery modifies the hunger and satiety in an obese individual. This is a prospective study conducted at Ruby Hall Clinic, Pune to assess the eating behaviors of obese in comparison to normal weight individuals and to understand the effect of bariatric surgery on it.

Methods: Eating behaviors of the obese group: preoperatively and postoperatively (n=36) were compared to those of the normal weight group (Gr1): (n=36) to identify the differences.

Results: Significant difference was found in the uncontrolled eating and emotional eating of the two groups and the obese scored higher on both. No significant difference was observed in the cognitive restraint. Gr1 scored highest on cognitive restraint then uncontrolled eating and then emotional eating. In obese group uncontrolled eating was the highest measured eating behavior, then emotional eating and cognitive restraint.

Post-bariatric surgery a drastic change was observed in the eating behaviors of the obese. The cognitive restraint increased by 13.17%, uncontrolled eating reduced by 50.2%, emotional eating reduced by 25.8%. This change was

compared with the Gr1 to see whether bariatric surgery improved the deranged eating behavior. Eating behaviors post surgery followed the same trend of the Gr1 of having higher cognitive restraint, and lower uncontrolled and emotional eating. The cognitive restraint was found to be higher and emotional eating and uncontrolled eating were lower than the Gr1.

Conclusion: Obesity is associated with a higher degree of uncontrolled and emotional eating and lower degree of cognitive restraint; and also that bariatric surgery is effective in correcting the disturbed eating behaviors and this change in could be an added advantage in maintaining long term weight loss. Patients with abnormal eating behaviour should not be denied the option of Barartric surgery as they are changeable.

O.158 C - Reactive Protein and Sialic Acids Changing After Bariatric Procedures

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Aim: of our study was to evaluate the impact of adjustable gastric banding (AGB) and gastric bypass (GB) on CRP levels in morbidly obese patients, to reveal the correlation between body weight decrease the changes of CRP levels, to instill the presence or absence of changes in other acute phase molecules levels (seromukoid, sialic acids) after bariatric procedures.

Materials and Methods: Retrospectively we have analyzed 45 clinical records of patients, who survived GB, and 45 patients after AGB with 6-months of follow-up. Gender: 86 – females, 14 – males; mean age – 46,8±2,7. Mean pre-op weight was 175±8,4 kg (mean BMI - 54,8±5,9 kg/m²). The mean pre-op CRP was 89,1+1,9 mg/L. Mean sialic acids level was 3,15±0,8 mmole/L, mean seromukoid level – 1,5±1,2 IU.

Results: In 6 months we observed body weight decrease: after AGB weight was 132,6+1,5 kg, after GB – 116 kg After both AGB and GB CRP levels significantly decreased: after AGB till 8,5±1,2 mg/L, after GB till 6,2±0,8 mg/L, but still normal levels of CRP were not reached yet (p<0,01). After AGB sialic acids were 2,96±0,7 mmole/L, seromukoid – 0,17+0,9 IU. After GB sialic acids level was 2,68±1,5 mmole/L, seromukoid - 0,18±1,1 IU.

Conclusions: After both adjustable gastric banding and gastric bypass CRP levels significantly decreased. CRP levels decreased after GB more prominently, what thoughtfully, could be associated with higher excess weight loss after gastric bypass. Between weight loss and CRP decreasing the positive correlation was installed. Elevated levels of sialic acids and seromukoid in pre-op stage were installed. After both procedures levels of seromukoid decreased more prominently in comperance to sialic acids. The positive functional correlation link was installed between CRP and sialic acids and seromukoid in morbidly obese patients.

O.159 Beyond the Indications. Current Status for Age, Low BMI, Chronic Diseases

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In 1991 the National Institute of Health (NIH) identified the indication to the surgical treatment for obese patients (i.e. age 18–60, BMI>40 or BMI>35 with comorbidity, etc.). Nowadays the large majority of bariatric procedure in US and Western Europe are Gastric Banding, Gastric Bypass and Sleeve Gastrectomy performed by laparoscopy in Center of Excellence with a multidisciplinary team. Technology and surgical techniques improved. We defined medical, endoscopical and surgical treatment of peri-operative, medium and long-term complications.

Recently many papers and some meta-analysis and systematic reviews were published evaluating long-term WL of the above mentioned procedures (%EWL is 55 for GB, 65 for GBP and 60 for SG at five years). Complications are 5-8% for GB, 5-15% for GBP, 12-20% for BPD at 5 years; mortality is 0.01% for GB, 0.5% for GBP, 0.8-1% for BPD. In the last 5 years several papers focused on the reduction of baseline comorbidities such as NIDDM, hyperlipemia, hypertension, cardiovascular diseases, OSAS and osteoarthritis. These papers concluded reporting dramatic long-term reduction of comorbidities. That being stated several COE published studies with cohort of patients with 30–35 BMI with comorbidities, studies with cohort of patients aged <18 or aged>60. ASMBS in 2011 stated bariatric surgery as an available option for patients with BMI 30–35. Consequently new guidelines were published modifying the 1991 NIH contraindication to bariatric surgery. Today patients with extreme indications should be strictly selected. Further studies need before extending the present indications.

O.160 Laparoscopic Sleeve Gastrectomy Recommended Procedure for Morbid Obese Patients with Epilepsy

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Introduction: There is little information in the medical literature regarding bariatric surgery in patients with epilepsy. There are concerns about medication absorption following surgery. There are concerns about seizures in patients having Roux Y Gastric Bypass. Laparoscopic Sleeve Gastrectomy (LSG) should not affect drug absorption.

Method: A prospective study of 11 patients with epilepsy who had LSG for the treatment of morbid obesity was carried out. There was no perative morbidity. Patients completed Pre and post operative questionnaires regarding their epilepsy diagnosis, medication and seizure details.

Results: All 11 patients were on medication preoperatively for their epilepsy. 1 patient had seizures peri-operatively due to missed medication. No patients any increase in seizures following surgery. No patients have needed any changes to their medication or dosing.

Conclusion: LSG in morbid obese patients with epilepsy does not adversely affect seizure rates or lead to any changes to epileptic medication and can be recommended for these patients.

O.161 Gastroesophageal Reflux Disease After Laparoscopic Adjustable Gastric Banding in Morbidly Obese Patients

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Introduction: Gastroesophageal reflux disease (GERD) itself is now recognized as obesity-related comorbidity. The aims of this prospective study were to determine the relationship between GERD and body mass indices and to assess the evolution of GERD after laparoscopic gastric banding (LGB).

Method: In 2009–2011 prospective randomized trial was started in Vilnius University Hospital. 103 morbidly obese patients were treated by LGB. One year after the operation 90 (87.4%) patients were examined (14 refused endoscopy and 76 (73.8%) were extensively investigated). Subjects before and one year after surgical treatment were clinically examined and the same instrumental studies, including endoscopy and X-ray, were performed.

Results: 103 patients - 69 (67%) women and 34 (33%) men were examined before the operation. The median age was 46.1 ± 11.5 years; mean body weight was 141.9 ± 24.2 kg. Mean body mass index (BMI) before and after

surgery were significantly different (47.49 kg/m² vs. 40.93 kg/m², $p < 0.001$). Before treatment GERD was diagnosed in 53 (51.5%) patients, including erosive form in 22 (21.4%) and non-erosive in 31 (30.1%). One year after the operation the non-erosive form was determined in 7 (6.8%) patients and erosive form was not found ($p < 0.001$). BMI > 45 kg/m² (OR 1.63, CI 0.6 to 4.428, $p < 0.001$) was associated with erosive GERD form.

Conclusion: Increased body weight (BMI > 45 kg/m²) is determined by the likelihood of GERD erosive form. Bariatric surgery, including LAGB, is effective treatment of GERD in morbidly obese patients.

O.162 Modified Nissen Fundoplication After Roux-en-Y-Gastric Bypass for Obesity: An Antireflux Surgery Alternative

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Introduction: Roux-en-Y gastric bypass (RYGB) has always been advocated for the treatment of obese patients with gastroesophageal reflux disease (GERD) as an alternative to fundoplication. Some obese patients with no previous GERD can develop the disease after the RYGB. We hypothesized that if an antireflux surgery should be performed even post RYGB it would be an effective treatment for GERD symptoms in selected patients post bariatric surgery.

Method: From March 2008-March 2012, 20 postoperative RYGB patients who complained of GERD symptoms were evaluated: pre and postoperative manometry and 24h-pHmetry were performed. If both exams were positive for GERD and hypotony of LES, patients were advised to undergo the modified anti-reflux surgery. The fundoplication was made by a 3 cm 360° laparoscopic wrap using the excluded stomach around the esophagus (34 Fr bougie in situ), preserving a previous construction of a vertically oriented proximal gastric pouch, with a 75–150 cm Roux limb, a 50cm jejunojejunostomy beyond the ligament of Treitz and a 12mm manual gastrojejunal anastomosis. This study was approved by the review board, and informed consent was obtained from all patients. Statistical analysis was made using Fishers test.

Results: Mean age was 35± 4.2 y/o, 60% were women and the mean BMI was 41.02± 3.2. The patients had no complications and experienced successful resolution of GERD symptoms (Visick 3 to 1; and reflux symptoms score 33 to 2). One year follow up showed asymptomatic patients without GERD or dysphagia. 50% of patients had 10% weight loss after the fundoplication.

O.163 Sleeve Gastrectomy with Crurorrhaphy: A Novel Approach in the Management of Hiatus Hernia with Morbid Obesity

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Introduction: Gastro esophageal reflux disease (GERD) is a common occurrence in patients who are morbidly obese & reflux symptoms may be seen in upto 80% of the patients with GERD. The recommended management of such patients is Roux-en-Y Gastric bypass. We present our experience of simultaneous occurrence of GERD and morbid obesity.

Methods: Patients admitted for Bariatric procedure with a preoperative diagnosis of hiatus hernia as evident by Upper GI endoscopy were included in the study. All patients were offered LRGBP. 16/40 patients accepted and underwent LRGBP.

Study period : 2009–2012

Total no. of patients : 40

Male: Female : 14:26

Mean BMI : 42

Mean age : 40 Years

Result:

GERD symptoms	40/40	
Hiatus hernia	36/40	4 patients diagnosed with Hiatus hernia on pre operative UGI endoscopy did not had any evidence of hiatus hernia intra-operatively.
Esophagitis Grade I	08	
Esophagitis Grade II	04	
Esophagitis without symptoms	28	
Patient underwent sleeve gastrectomy with Crurorrhaphy	20	
Patient underwent simple sleeve gastrectomy	04	
Laparoscopic Roux-en-Y gastric bypass	16	

Symptoms:

	After 1 st Year	After 2 nd Year	After 3 rd Year
LSG- symptoms free	21	22	21
LSG - minimal reflux	03	02	03
LRGBP - symptoms free	15	16	16
LRGBP – minimal reflux	01	0	0

Conclusion: LSG with crurorrhaphy can be accepted as a standard of care for patients with morbid obesity and hiatus hernia with comparable results to LRGBP.

O.164 Oesophageal Rupture - a Pseudo-achalasia Related Delayed Complication After Laparoscopic Adjustable Gastric Banding

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Aims: Laparoscopic adjustable gastric banding (LAGB) is a common bariatric procedure in the UK due to its relative technical ease/reversibility. Although its immediate complications are known, longer term complications are still emerging and incompletely understood. Oesophageal dysmotility post-LAGB is now increasingly being recognised as a long-term complication. This paper presents a potentially life-threatening complication associated with oesophageal dysmotility 12yrs after LAGB placement.

Methods: A 58yr-old lady presented with chronic cough and mediastinal widening on chest X-ray. A computed tomogram (CT) revealed a mega-oesophagus with a collection in the mediastinum suggestive of contained oesophageal perforation and LAGB in-situ placed 12yrs ago. She experienced recurrent coughs, chest infections, weight loss and dysphagia for 2yrs.

Results: The LAGB was completely emptied (9mls). Conservative management with nil orally, nasogastric drainage, antibiotics, parenteral nutrition over a period of 4 weeks and serial imaging was performed to monitor progress. She responded well with complete healing.

Conclusions: While oesophageal dysmotility is an emerging long-term complication occurring 5-7yrs post-LAGB, its association with oesophageal perforation has not been published prior to this incident. Oesophageal dysmotility resulting in mega-oesophagus and the associated reflux caused frequent coughing in our patient. Possibly, the valsalva manoeuvre during coughing may have generated a high pressure zone within the oesophagus leading to perforation. This was a potentially life-threatening complication re-enforcing the importance of life-long follow-up in these patients. We suggest patients developing mega-oesophagus be identified with timely band-emptying to avoid this serious complication. Further long-term studies need to be performed to determine the prevalence of such complications.

O.165 Concomitant Cholecystectomy During Laparoscopic Bariatric Surgery

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Introduction: Morbid obesity is associated with a high prevalence of cholelithiasis. We report our experience with concomitant bariatric surgery and cholecystectomy in a multidisciplinary center for bariatric surgery.

Methods: Bariatric surgery (BS) and cholecystectomy was performed only for patients diagnosed with symptomatic gallbladder stones and was compared to a large group of BS only.

Results: The BS only group (1958 procedures between the years 2006–2012) consisted of Laparoscopic Adjustable Gastric Banding (LAGB) (53, 2.7%), Laparoscopic Roux-en-y Gastric Bypass (LRYGB) (114, 5.8%), and Laparoscopic Sleeve Gastrectomy (LSG) (1791, 91.5%). The concomitant surgery (CS) was performed on 124 patients. CS consisted of LRYGB (8, 6.5%), and LSG (116, 93.5%). Females were 65% in the BS group and 79% in the CS group. Median age was 42 and 45 in BS and CS groups, respectively. Average weight and average BMI were similar in both groups: 121.4±16.4, 43.2±4.4 and 119.0±15.0, 43.6±4.5 in BS and CS groups, respectively. Average number of comorbidities/patient in both groups was identical (3.6), showing similarity between patient types in both groups. Rate of common surgical complications was similar 30 (1.5%) hemorrhages and 21 (1.1%) leakages in the BS group and 3 (2.4%) and 1 (0.8%) in CS. There was one case (0.8%) of bile leakage. Of special interest is the diagnosis of gallbladder carcinoma in 2 (1.6%) older female patients with large gallbladder stones.

Conclusion: Concomitant cholecystectomy during laparoscopic bariatric surgery is safe and reduces the potential for future gallbladder-related morbidity, and the need for additional surgery.

O.166 Ventral Hernia Repair in Obese Patients

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Background: Obesity is an important risk factor for developing ventral hernias while their repair represents a therapeutic challenge. There surgical management of ventral hernias in bariatric patients is difficult and still controversial.

Method: Our goal is to present the rationale and the results of a tailored approach to ventral hernias repair (VHR) in the morbidly obese patients.

Results: After a complete preoperative evaluation the 5 categories and therapeutic alternatives are described and discussed: I. VHR in obese patients with

no metabolic procedure indicated or accepted - the preferred technique is the laparoscopic VHR, but there are limits for the extreme obese patients/giant hernias, II. Staged Approach A: First step - bariatric procedure and second step -hernia repair III. Simultaneous VHR (preferred laparoscopic technique) and bariatric surgery in obese patients, IV. Staged Approach B: First stage - hernia repair and second step- the bariatric procedure. V. Hernia occurred in the postoperative period after a metabolic procedure. Particular cases illustrate each situation and the results are presented:

Conclusions: The optimal management and timing of VHR in obese patients should weigh the risk of the surgical treatment of the hernia in terms of recurrence and perioperative complications of hernia repair against the risk of no touch of hernia and consecutive hernia associated complications. Morbidly obese patients undergoing VHR represent a challenge for the team. Therefore we believe that only a dedicated center for obesity can offer the requested environment, adequate technological and medical support, experienced team in the management of this difficult cases considering beside hernia repair also a bariatric procedure.

O.167 The Development of Ulcer Disease After Roux-en-Y Gastric Bypass

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Introduction: With the growing use of bariatric surgery a subsequent increase in the complications associated with this surgical procedure takes place. This research focuses at marginal ulceration (MU) after (laparoscopic) Roux-en Y Gastric Bypass surgery (LRYGB). Our aim was to assess the incidence, mechanism, symptoms and healing of marginal ulceration after LRYGB surgery.

Methods: All files of patients who underwent a LRYGB were searched for signs of abdominal pain, epigastric burn, nausea or other symptoms of ulcer disease. Also symptoms of (perforated) MU as acute abdominal pain, vomiting, melaena and haematemesis were scored. Possible contributing factors were identified. Results of medical and surgical treatment were evaluated.

Main results: 419 patients underwent LRYGB. 26 (6.2 %) of them developed marginal ulcer of which five (1.2%) presented with perforation. The use of non-steroidal inflammatory drugs (NSAIDs), smoking and prednisolon- inhalation corticosteroids significantly contributed to the formation of MU. Five patients needed reoperation for healing because of more complicated presentation. All other patients could be treated medically with proton pump inhibitors sometimes together with Ulcogant .

Conclusion: With the increasing use of bariatric surgery, the ulcerogenic potential of the LRYGB becomes of greater concern. The use of nicotine and NSAIDs must be stopped. The use of inhalation corticosteroids should be minimized.

O.168 Comparison of Ghrelin Plasma Levels Between Pre and Post Operatory Period in Patients Submitted to Gastric Plication Associated with Fundoplication

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Introduction: The recurrence of the gastroesophageal reflux disease (GERD) may be related to later postoperative weight gain, therefore increasing the chances of developing columnar metaplasia and cancer. The gastric plication associated with fundoplication can be employed in order to be treating both issues. The aim was to

evaluate the serum ghrelin hormone in preand postoperatively as well as weight loss and control of reflux disease in patients undergoing gastroplicature associated with fundoplication.

Method: We performed laparoscopic gastric plication with fundoplication in eight patients; endoscopic examinations were performed preoperatively and postoperatively as well as blood collection for ghrelin hormonal dosage.

Results: There was control of reflux symptoms and mucosal lesions. Weight loss was significant. The change of the hormone ghrelin was not of great significance.

Conclusions: Gastric plication associated with fundoplication was effective in treating GERD with surgical indication and for weight loss in obese patients. Appetite control occurs, but not due to ghrelin, because no significant decrease of its plasmatic levels was observed.

O.169 A Comparison of Diabetes and Insulin Resolution After Roux-en-Y Gastric Bypass and Sleeve Gastrectomy

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Introduction: Bariatric surgery has been shown to be effective in resolving and improving diabetes mellitus (DM) in many studies. This study investigates resolution and reduction of insulin use in patients undergoing laparoscopic Roux-en-Y gastric bypass (LRYGB) and sleeve gastrectomy (LSG).

Methods: A retrospective review of 1072 consecutive patients undergoing LRYGB (746) or LSG (326) from October 2005 until December 2011 was done.

Results: DM was present in 224(30%) of LRYGB and 62 (19%) of LSG patients. The mean BMI was 47.7 (range 35.1-84), mean age was 46.6 (range 16–66), and 80% were female. Ninety four (42%) of LRYGB and nine (14.5%) of LSG DM patients were on insulin. The mean insulin dosage was 128 units (range 18–350). Overall, 76.3% of LRYGB and 77% of LSG resolved their DM. In patients who did not require insulin preoperatively, 97% of LRYGB and 81% of LSG patients had resolution of their DM ($p<0.001$). In patients who were insulin dependent preoperatively, 48 (51%) patients of LRYGB and 6 (67%) of LSG no longer required insulin ($p=NS$). In the remaining 50 patients (48%) whose DM improved the mean insulin dosage decreased from 119 +/- 72 units to 29 +/- 27 units postoperatively ($p<0.001$).

Conclusion: LRYGB significantly resolves nearly all while LSG resolves greater than 80% of patients who are only on oral diabetic medications. More than 50% of insulin dependent diabetics no longer require insulin after LRYGB or LSG. Of those that still do require insulin there is a mean 75% reduction in insulin dosage postoperatively.

O.170 Ileal Interposition with Diverted Sleeve Gastrectomy (II-D-SG) Reduces Inflammatory Pathways in Type II Diabetes Mellitus (T2DM) Obese Patients

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Introduction: Obesity has emerged as a state of chronic low-grade inflammation characterized by a progressive infiltration of immune cells, particularly macrophages, into obese adipose tissue. In early-obesity, M2 anti-inflammatory macrophages acquire an M1 pro-inflammatory phenotype and exacerbate local inflammation promoting insulin resistance (IR), leading to T2DM. Sg-d-II reduces body weight and improve glucose metabolism, but it is unknown if is able to reduce inflammation and prevent cardiovascular complications.

Methods: 10 T2DM obese patients had SG-d-II and were compared to 34 healthy controls (HC) and 18 diabetic patients on chronic insulin treatment. All the patients had blood tests for glycaemia, plasmatic insulin, HbA1c, C reactive protein, and were also analyzed for CD38 and HLA-DR expression on monocytes and CD8+ T cells by flowcytometry. For the same parameters T2DM patients were evaluated before and 9 months after surgery.

Results: At time 0 all blood values were significantly higher in obese diabetics in comparison to the control group ($p<0.05$). In the same patients we observed a decrease in the glucotoxic mediated changes measured by endocrine function tests. In regard to CD38 9 on monocytes, baseline values in T2DM were high and comparable to DMIT and were significantly higher than HC ($p<0.001$). CD38 expression markedly and significantly reduced 9 months after surgery ($p0.026$).

Conclusions: II-d-SG is accompanied by amelioration of glucotoxicity in obese diabetics patients and reduction in the expression of inflammatory markers on monocytes in the majority of the patients. SG-d-II may reduce cardiovascular complications by normalizing glucose metabolism and significantly reducing immune activation.

O.171 Results of Mini Gastric Bypass: Dutch Experience from a High Volume Centre

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Introduction: mini gastric bypass (MGB) is metabolic surgery with a controversial character: New insight and recent data show there is actually no good reason for this controversy, and results seem very promising. In 2010 we introduced MGB in our hospital. Short term results were evaluated.

Methods: A prospective cohort of patients who underwent MGB between 2010 and 2012 were evaluated.

Results: Since 2009 more than 2000 bariatric procedures were performed in our hospital: MGB is performed in 96 patients. Mean BMI was 41 kg/m² (range 22–57) In 24 % the operation was performed as revisional procedure. Mean operation time was 66 min. There was no mortality. Serious complications occurred in 2%; no anastomotic leaks. Biliary reflux occurred in 6% requiring reintervention. This is higher than reported in literature and led to a critical review of our technique. Having experience with RNYGBP, in initial implementation of this operation we created a too short pouch leading to biliary reflux. Adapting the technique to longer pouch, no patients reported biliary reflux. Mean follow-up was 15 months. At 1y mean EWL was 92%, mean TBWL 32%. These results outperform our results of standard gastric bypass (RNYGBP) and Sleeve Gastrectomy (SG) with mean 1 year EWL of 70%.

Conclusions: In our experience weight loss after MGB is better compared to RNYGBP and SG.

We advise surgeons who are interested to learn this promising technique have a proctoring guide by an experienced MGB surgeon before implementing this technique.

O.172 Low Morbidity After Omega Loop Gastric Bypass: Experience with 804 Patients (2006–2012)

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The omega loop bypass (MGB), is considered as efficient as the Roux-en-Y (RYGB) but, with only one anastomosis, should result in significant less complications. Between October 2006 and December 2012, 804 patients received a MGB in our comprehensive obesity surgery center, with a mean age of 41,12 ± 14.61 years (17,5-62,4), a mean weight of 131.91 ± 23.96 kg (75–221),

a mean BMI of 47.03 Kg / m² ± 7.07 (32,8-80,2). There has been two late deaths (0,2%) : pulmonary embolism for a 67 year old lady and myocardial infarction for a 63 year old man. Overall morbidity rate was 6% (N = 49).

23 moderate complications have been managed medically (2 abdominal abscesses, 2 pulmonary embolisms, 3 phlebitis, 1 bleeding, 15 ulcers). 26 complications (3,2%) required reoperation (6 leaks, 2 abscesses, 4 hernias, 5 obstructions, 2 bleedings, 3 ulcers, 4 biliary reflux).

2 marginal ulcers led to a late peritonitis. 5 MGB (0,6%) were converted in RYGB at 23,62 months ± 9,14 : one for ulcer, 4 for biliary reflux. These patients were heavy smokers and their mean BMI reached then 25,77 ± 3,48 kg/m². This study confirms an outstanding low morbidity after MGB. Like after RYGB it is mandatory to detect marginal ulcers and continue PPI on smokers. The rate of conversion to RYGB remains very low, essentially for intractable bile reflux on patients having lost all their excess weight.

O.173 The Mini-Gastric Bypass in Italy. Outcome from 974 Consecutive Laparoscopic Procedures in a Multicentre Study

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Introduction: Because of the failure of the "Old Mason Loop" the Mini-Gastric Bypass (MGB) has been viewed with skepticism. Over the past 16 years a growing number of authors from around the world have continued to report excellent short and long term results with the MGB.

Materials and Methods: One university centre, three regional and two private hospitals participated in this study. From July 2006 to December 2012, 475 male and 499 female patients (pts) (48.8% vs. 51.2%), underwent 974 laparoscopic MGB. Mean age was 39.4, preoperative body mass index (BMI) was 48±4.58 kg/m². Type 2 diabetes (T2DM) affected 224/974 pts. Major endpoints were to define both MGB safety and efficacy in the long term.

Results: Conversion rate to open was 1.2% (12/974), mortality was 2/974 patients (0.2%). Pre-operative morbidity was 54/974 (5.5%), and mean hospital stay (LOS) was 4.0±1.7 days. Late complications affected 73/974 pts (7.4%). The majority 66/74 (89.1%) occurred within one year.

Bile reflux gastritis was symptomatic with endoscopic findings in 8/974 patients (0.8%), acid peptic ulcers were reported in 14/974 (1.4%). At 60 months the EWL% was 77 ± 5.1, T2DM remission 84.4% and resolution of hypertension 87.5%.

Conclusions: Other bariatric procedures have been recognized to have major limitations. In spite of initial skepticism, this study, along with many other large scale, long term similar studies from around the world (Taiwan, USA, France, Spain, India, Lebanon and others) demonstrates the MGB to be a short, simple, low risk, effective and durable bariatric procedure.

O.174 Mini-Gastric Bypass as Primary Procedure in Super-Obesity Early Results from Germany

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Introduction: Despite widespread prejudices against Mini gastric bypass (MGB) in Germany we introduced MGB as procedure of choice for super-obese patients with BMI > 50 since November 2011. We report our early results.

Method: Depending on BMI we established the following therapeutic algorithm concerning the selection of primary bariatric procedure: RYGB for BMI < 50, MGB for BMI 50 to 60 (65), Sleeve gastrectomy as a first step procedure for BMI > 60 (resp. 65, depending on fat distribution type). Peri- and postoperative data were collected prospectively, consecutively evaluated and compared with the data from the literature.

Results: 41 super-obese patients (30 females, 11 males) with mean BMI of 55,1 kg/qm (50,0 to 62,7) had laparoscopic MGB (LMGB) from November 2011 to March 2013. Mean body weight was 156,8 kg (120,0 to 210,0). Depending on BMI, the bypass length was between 200 and 350 cm (mean 264,6 cm). There were no conversions to open bypass or to other procedures. Mean operation time was 79,9 minutes (45 to 150), mean hospital stay 4,5 days (3 to 10). There were two perioperative complications (postoperative hemorrhage demanding re-laparoscopy on day 0 and one viral respiratory infection). Follow-up intervals were routinely 3 monthly in the 1st year and then yearly later-on. Mean excess weight loss at 6 months was 53,5 % .

Conclusion: LMGB appears as an effective and feasible procedure especially in super-obese patients with BMI>50 in whom it seems to us the better alternative to sleeve gastrectomy. Long-term results must be evaluated.

O.175 Volumetric Evaluation by Postoperative Gastroscanner: Prospective Study with 156 Patients Operated with Mini-Gastric Bypass

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Introduction: The aim of this study was to assess the pouch volume after mini-gastric bypass (MGB) to improve the long term follow-up with these patients. **Methods:** From January 2011 to March 2012, 156 patients were operated with a MGB. Out of them, 103 had a previous bariatric surgery. Gastroscanner was done 1 month after the MGB. They were divided in two groups related with the existence or not of previous bariatric surgery. Volume of the gastric pouch and size of the anastomosis were compared in term of weight loss. We used excess of BMI lost (%EBL). T test of Student was used (p<0,05 being regarded as significant).

Results: Mean follow-up was 349 days. The gastroscanner could not be done in 13 cases. Five patients out of the 143 (3%) did not tolerate the examination. Mean gastric pouch volume was 64 ml +32 (20–200). Mean size of the gastro-jejunal anastomosis was of 19.9 mm +7 (9–30). The gastric pouch volume was larger in previous bariatric surgery group (p=0,015), whereas there were no statistical difference between the two groups regarding the mean size of gastro-jejunal anastomosis. Mean %EBL was 84% + 48 (14–327). There were no significant difference with the % EBL between the two groups (p=0,26).

Conclusion: Gastric pouch volume does not interfere on the weight loss. This study require a longer-term evaluation.

O.176 Mini Gastric Bypass Vs Laparoscopic Sleeve Gastrectomy; a 5 Year Follow Up

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is being commonly used as a primary procedure for weight loss .Few studies have compared Roux-n-Y gastric bypass to LSG. The objective of this study was to compare the results of LSG with Laparoscopic Mini Gastric Bypass (MGB) up to 5 years postoperatively.

Methods: Prospectively collected bariatric database of 104 MGB and 118 LSG patients operated till march 2008 at our institute was retrospectively reviewed.

Factors like excess weight loss, weight regain, revision rate and the complications were compared between the LSG and MGB.

Results: Follow-up was achieved in 72 MGB versus 76 LSG patients up to year 5. The average % excess weight loss (EWL) for MGB versus LSG was 63.1 % versus 69 % at 1 year, 71.6 % versus 66.2 % at 2 years, and 68 % versus 51.2 % at 5 years respectively. Revision was done in 1 MGB patients for weight regain & 16 LSG patients (13 for weight regain and 3 for acid reflux). There was no mortality or leak in either group. Bile reflux was seen in 2 MGB and new onset acid reflux was seen in 18 LSG patients. Dilatation of the stomach pouch was significantly less in MGB (20%) than LSG (80%) at 5 years, as seen on barium meal.

Conclusion: Weight loss is similar in MGB and LSG in first two years, after which the LSG dilates more than MGB which may cause higher weight regain. LSG shows higher acid reflux, so should be carefully chosen in patients with pre-existing acid reflux disease.

O.177 Gastric Bypass: Primary, Revisional or After Balloon-What are the Differences?

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Introduction: Roux-en-Y Gastric Bypass (RYGB) is the Gold-standard technique for the treatment of obesity. Besides being used as primary technique, it is also widely used after failed gastric banding and sometimes after temporary intra-gastric balloon. It is not yet clear if the results are the same in each situation. The objective of this report is to compare the results of RYGB as primary (P), revisional (R) or after balloon (B).

Methods: Prospective cohort of 232 consecutive patients that underwent RYGB between January 2009 and December 2011. Clinical and biochemical follow-up for 12 months after surgery.

Results: Most RYGB were primary (232), 9 were revisional and 19 after balloon. Mean age was 39 years and most patients (88.8%) were female. Mean BMI was 45.8. There were no significant differences between groups for age ($p=0.34$), gender ($p=0.8$), metabolic syndrome ($p=0.4$) or post-operative complications ($p=0.57$). At 6 and 12 months there was lower %EWL for revisional surgery and after balloon (12 months BMI: 29.5 P; vs 33.1 R vs 34.1 B; $p<0.001$). By multivariable linear regression, pre-operative BMI ($p<0.001$), age ($p=0.01$) and type of surgery ($p=0.001$) were independently related with 12 months BMI.

Conclusion: Primary RYGB is superior to revisional surgery in terms of weight loss. However, revisional surgery stills accounts for a significant weight loss and co-morbidities resolution. These differences still require a technical or physiological explanation such that further studies are required.

O.178 Mini-Duodenal Switch: Single Anastomosis Duodenal-Jejunal Bypass with Sleeve Gastrectomy: a Novel Metabolic Surgery

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Background: Biliopancreatic diversion (BPD) or duodenal switch is more effective than other bariatric surgeries in weight reduction and diabetes remission. However, many side-effects exist.

Methods: Twenty obese patients with diabetes underwent our novel procedure, laparoscopic single anastomosis duodeno-jejunal bypass with sleeve gastrectomy (mini DS), and were followed for 1 to 6 months. Operative complication, weight loss and DM remission were followed.

Results: The series consisted of 9 males and 11 females, with an average of 43.3 ± 9.6 years (from 26 to 61) and the mean BMI was 36.5 ± 5.1 (from 28 to 50.9). The mean duration of DM was 6.0 ± 5.2 years and mean HbA1C was $9.9 \pm 2.2\%$. The mean operative time was 193 ± 43.2 minutes (from 165 to 255). All procedures were performed by laparoscopic surgery. None of them had major peri-operative complication. Three patients (15%) were readmitted in 30 days postoperatively due to severe nausea but required supportive treatment only. At follow-up, the weight loss was 15.1%, 20.3% and 21.5% and mean HbA1C decreased to 7.9%, 6.5% and 6.2% at 1, 3 and 6 months.

Conclusions: Laparoscopic mini-DS appears to be an ideal metabolic surgery for treating obese diabetes patients.

O.179 Effects of Ileal Interposition with Diverted Sleeve Gastrectomy (II-d-SG) on Type 2 Diabetes Mellitus (T2DM) Obese Patients: The Role of Ileal Interposed Loop Length

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Introduction: Ileal interposition with duodenal exclusion and sleeve gastrectomy, has been proposed as a very effective operation to control glycaemic metabolism in obese diabetic patients. The length of the ileal limbs varies in the experiences of De Paula, Goel, Tinoco, Kota, Ugale and Alper.

Methods: In our experience we used jejunal transposed limb varying the length from 100 to 170 cm, according to the glycaemia level. There were 4 patients with limb < 100 cm, 35 patients with a length from 100 to 150 cm and 11 patients with more than 150 cm. All the patients were followed up at 1, 3, 6 and 12 months. Clinical assessment and blood tests were used to evaluate the incidence of side effects, malabsorption (steatorrhea), changes in glucose metabolism and glycated haemoglobin.

Results: All patients had full resolution of T2DM. Patients with less than 1 meter interposition never had steatorrhea, patients with limb > 150 cm. had mild steatorrhea. Some degree of malabsorption was present in patients with a jejunal limb between 100 and 150 cm.

Conclusions: Ileal interposition length is the crucial factor for the classification of II-d-SG in malabsorptive surgery. When the limb was shorter than 100 cm, the operation was fully incretinic without malabsorptive effects.

O.180 Long Term, Multiple Intra-gastric Balloon (BIB) Treatment: A New Strategy to Treat Morbid Obese Patients Refusing Surgery. Prospective Study with 5 Years of Follow-up

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Background: Obesity is an increasing health problem. Dietary intervention often fails in the medium long-term and surgery is the gold standard treatment. Intra-gastric balloon is a valuable treatment in short-term and multiple balloon treatment has been demonstrated to be effective in the medium period. Aim of this study was to investigate the efficacy of multiple balloon treatment in long term (6 years) in terms of weight loss, influence on comorbidities and quality of life in patients refusing surgery.

Material and Methods: 83 patients (19M/64F, mean age 37.4, mean BMI 43.7) with BMI >40, good candidates for surgery but refusing it, were enrolled in a prospective study involving multiple balloon placement. After removing the first BIB, a second balloon was placed if the patients had regained 50% of the weight lost with previous balloon. Weight and comorbidities parameters and quality of life test (SF-12) were recorded until a follow-up of 76 months.

Results: All patients experienced a second balloon placement; 18pts placed a third device and only 1 patient the fourth. At 76 months follow-up mean BMI was 37.59 Kg/m² ($p=0.0008$). Significant difference was recorded between comorbidities at baseline (80% of the patients) and follow-up (30% of the patients) ($p=0.02$), and SF-12 in the follow-up corresponded to significantly better scores than those at baseline ($p < 0.001$).

Conclusion: Multiple BIB, in patients refusing surgery, is the recommended treatment to achieve a good weight loss, a better control of comorbidities and better quality of life than baseline.

O.181 Comparison of the Air-Filled and Liquid-Filled Balloons in Terms of Efficacy, Adverse Reactions and Tolerance

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Introductions: Liquid-filled or air-filled balloons are the options for intragastric balloon replacement operation. The aim of our study is to compare the efficacy, adverse reactions and patient tolerance for both of these options.

Materials and methods: Overweight patients with body mass index lower than 35 kg/m² or with the indication for bariatric surgery were enrolled within this study for intragastric balloon replacement. Liquid-balloon was used for 22 patients and air-filled balloon was used for 27 patients. Loss of weight, percentage of weight loss, intolerance and changes of the previous co morbidities were compared between these patient groups.

Results: Forty-nine patients who underwent intragastric balloon replacement between November 2010 and March 2013 in Ankara Numune Training and Research Hospital. The median weight and BMI for patients in the liquid-filled balloon group was 109.2±14.1, 36.1±5.5, the median weight and BMI in the air-filled balloon group was 107.7±17.1 and 36.9±5.9, respectively. After the removal of the balloons ; the weight and the BMI of the patients were in the liquid –filled group ; 90.4±14.2 and 30.9±3.5, in the air- filled group 90.8±15.1 ,and 31.9±4.5($p=0.984$, $p=0.435$ respectively). The most common side effect was epigastric pain in the liquid-filled balloon group ($p=0.022$). There was no significant difference for the alterations of previous co morbidities between the two groups.

Conclusion: We claim that on behalf of weight loss there is no difference between the two groups; air-filled balloon may cause less epigastric pain than liquid-filled balloon.

O.182 Report of a New Type of Complication with the Use of Intragastric Balloon (BIB System) in the Treatment of Obesity

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Background: The Intragastric Balloon (BIB System) together with restricted diet has been successful used for the treatment of obesity. His use is well established as a help in moderate obesity (BMI >30 < 35) as single procedure, or for “sequential” treatment to evaluate the compliance of the Patient to maintain a restricted food habit behavior. All the studies reports a fairly constant rate (5%) of “intolerance” toward the prosthesis at a variable time after the positioning with various degree of vomiting. In the most cases the Patients has the balloon removed. No reason has been found to explain this “intolerance”. We describe a reason could explain at least a part of those cases.

Patients: A single Centre, single Operator treated with BIB between 2002 and 2012 a total of 352 Patients, age 18 – 71 250 were Female, wile 102 Man with a BMI ranging from 30 to 62. According to the factory instructions all BIB were

extracted after a 6 months time. All the balloons were inflated at 600 cc of saline with methylen bleu. There were no majors complications like intestinal occlusion or gastric laceration. 5 Pts had the balloon removed due to its spontaneous desufflation, 10 were treated medically for epigastric pain while 2 had a nasogastric tube inserted to deflate a acutely dilatated stomach. 15 Patients (4.2 %) suffered of incoercible vomiting and had the balloon removed. **Discussion:** On those “intolerant” Patients a plain abdomen radiogram was obtained before the removal of the prosteis discovering a gas–liquid level within the balloon, reaching in some cases more of the equator, so doubling the size of the balloon. After a first occasional finding all the Pts suffering of uncommon vomit were studied, discovering various degree of gas inside the BIB. The communications will explain and discuss clinical finding, reasons and operative guide lines in the managing of this complication.

O.183 Operative and Short-Term Clinical Outcomes of Hand-Sewn Versus Linear Stapled Gastric Bypass for Morbid Obesity: Results from Two Tertiary Referral Bariatric Centres

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Background: In laparoscopic Roux-en-Y gastric bypass (LRYGB) the gastro-jejunal (GJ) anastomosis may be performed using linear stapled (LSA) or completely hand-sewn (HSA) techniques. This comparative study aimed to examine operative & short-term clinical outcomes of both techniques, performed by 2 Bariatric Surgeons at two tertiary referral Bariatric Centres.

Methods: Data on consecutive primary LRYGB were prospectively collected over 20-months.

One Centre had an established LRYGB service; the other newly developed this service. Data collected included patient demographics, co-morbidities, morbidity, mortality, length of stay (LOS), re-operations & excess weight loss (EWL). Data are Mean±SD.

Results: In total 365 LRYGB were studied during the study period.

	LSA	HSA	p-value
Number	144	221	
Age, yrs	46±10	47±10	0.17
BMI, kg/m²	48±5	54±7	<0.001
Female	76%	71%	0.23
Hypertension	53%	44%	0.09
Diabetes Mellitus	50%	37%	0.02
Sleep Apnoea	38%	25%	0.01
Operative time, min	171±30	124±28	<0.001
Morbidity	4	13	0.21
Reoperations	6	8	0.79
Mortality	0	0	-
Anastomotic leak	0	0	-
GJ stricture	0	2	0.52
LOS, days	2.4±0.9	2.3±1.5	0.22
6-month EWL, %	50±20	54±14%	0.17
12-months EWL, %	70±18	71±19%	0.76

Conclusion: Both LSA and HSA in LRYGB may be performed safely with no significant differences in morbidity, mortality, reoperations, LOS, or stricture rates. There were comparable short-term EWL with both techniques.

O.184 Laparoscopic Conversion of Gastric Banding into Roux-en-Y Gastric Bypass

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Background: Laparoscopic adjustable gastric banding (LAGB) for the treatment of obese patients has become increasingly popular. The Problem of revision of failed GB procedures is a common situation. The conversion into Roux-en-Y gastric bypass (RYGBP) is the procedure of choice. We report our series of 100 patients.

Methods: Data on obese patients with failed LABG converted to LRYGBP were extracted from a prospective held database. The indications for conversion to RYGBP were primary inadequate weight loss or secondary weight regain, pouch enlargement, gastro oesophageal reflux disease/vomiting, band migration and peritonitis in 65, 14, 11, 8 and 2 patients respectively. The removal of the band was done at the same time or before the LRYGBP.

Results: From March 1999 to December 2012, 100 patients underwent the conversion into LRYGBP. The male to female ratio was 89:11 with a mean age of 44 years. Mean initial BMI was 42.1 kg/m². There were 69 comorbid conditions in 40 patients. The RYGBP was performed laparoscopically in 92 cases, conversion to laparotomy was performed in 11 cases. At a mean follow-up of 55.3 months, the mean BMI and excess weight loss were respectively 29.8 kg/m² and 59 %. Blood tension normalized in 12 patients and improved in 3, diabetes normalized in 9 patients and improved in 2, and sleep apnoea normalized in 9 patients. There were 9 early and 13 late complications.

Conclusion: The conversion of failed LAGB into LRYGBP is feasible, safe and effective for the treatment of obese patients, but the complication rate is higher.

O. 185 Conversion of Gastric Banding to Roux-En-Y Gastric Bypass is Feasible and Safe in a Single-Step Procedure: A Single Centre Study of 559 Patients

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Aim: To achieve additional weight loss or to resolve band-related problems, a laparoscopic adjustable gastric banding (LAGB) can be converted to Roux-en-Y gastric bypass (RYGB). With this study the outcome in terms of the early mortality and morbidity is determined and the safety of a single-step procedure compared with a two-step procedure is evaluated.

Methods: A prospectively maintained database from October 2004 to December 2012 was retrospectively reviewed. Only 559 patients with the gastric banding still in situ, were included. Either a single-step procedure (LABG removal combined with RYGB) or a two-step procedure (LABG removal followed by RYGB in a second procedure) was performed.

Results: In 423 patients (75.7%) a single-step procedure was performed. In 2011 and 2012, this single-step procedure was achieved in 91.9%.

No mortality or anastomotic leakage was observed. Only 34 patients (6.1%) had a 30-day complication: most commonly hemorrhage (2.9%) and iatrogenic perforation of small bowel in one patient. There was no significant difference in complications between the single-step and two-step patients.

Conclusion: Converting a LABG to RYGB can be performed with a very low morbidity and zero-mortality in a high-volume revisional bariatric centre. These excellent results can be explained by the full-standardized surgical technique, the meticulous dissection and construction of the gastric pouch and the gastro-enterostomy and the tailored approach for a one or two step procedure. In due course, there was a significant increase in performing the conversion from LABG to RYGB single-staged, according to an important learning curve with a comparable complication-rate.

O.186 Banded Micropouch Roux-en-Y gastric Bypass as a Revisional Bariatric Procedure

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Introduction: Bariatric procedures have variable success and Failure rates. Revisional bariatric surgery is an important part of the bariatric surgery practice. Revisional bariatric procedures are complex with higher morbidity. Laparoscopic Banded micro-pouch Roux-en Y gastric bypass (LBMRYGB) gave excellent weight loss outcome in our primary patients.

Aim of Work: a prospective study evaluating the use of BMRYGB as a revisional bariatric procedure in cases of failed primary procedures.

Methods: From April 2004, 289 patients had a LBMRYGB as a revisional bariatric procedure. 86 % were females mean age 34 years, 104 patients (36%) had a previous gastric banding, 93 patients had a vertical banded gastroplasty (32%), 26 patients (9%) had a Roux-en-Y-gastric bypass 35 patients (12.2%) had a sleeve gastrectomy. 31 patients (10.8%) had multiple previous procedures.

Results: 25 patients had postoperative leaks (8.6%), 3 patients had pulmonary embolism (1%), 2 patients had pneumonia (0.7%). GIT bleeding in 2 patients (0.7%), 4 patients died (1.4%) mortality. Late complications were band erosion in 3 patients (1%), excessive weight loss in 5 patients (1.7%). Postoperative weight loss was 76% EBWL at 18 months. 72% EBWL at 36 months, 69% EBWL at 5 years and 66% at 10 years.

Conclusion: LBMRYGB gives excellent and durable weight loss as a revisional bariatric. Complication rates are higher than the primary group but similar to revisional surgery literature. Good primary and secondary procedure choice remains very essential to reduce treatment failures.

O.187 Transgastric Intraabdominal Gastro-Jejunostomy with Two Different 25 mm Circular Staplers – A Comparative Randomized Study

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Background: Laparoscopic Roux-en-Y astric bypass (LRYGB) with circular stapling technique has been established as a safe and effective procedure for morbid obesity management. The aim of the study was to compare a new circular stapling device with a standard device used since 2001.

Material and Methods: One hundred forty seven consecutive circular stapled gastro intra-gastric-intraabdominal jejunostomies with two different circular stapler were studied in a prospective procedure. The randomisation was done related to different days. The new device namely the 25 ECS (Touchstone Ltd) was compared with the 25 ILS (Ethicon Endosurgery) – the data collection was performed prospectively in a standardized protocol (developed by the Austrian Society for Obesity- and Metabolic Surgery in 2002). Endpoint of the study was the clinical outcome, the handling and safety of the anastomosis. Within a standardized follow-up program all patients were seen minimum twice within one year and a routine barium test was performed after 3 and 12 months in all patients.

Results: Between October 2011 and January 2013 we performed 71 LRYGB with the 25 ECS and 77 LRYGB with the 25 ILS. No anastomotic leak was observed in both groups. The overall anastomotic complication rate was 6.1%, 9/147. Nine patients underwent an endoscopy due to food intolerance, upper abdominal pain and or bleeding. Five patients (3.4%) were identified with GJ stricture and received at least one endoscopic dilatation. Three Patients (2%) developed an anastomotic ulcer and one patient in the ILS group had an anastomotic bleeding receiving endoscopic adrenalin injection. There was no significant difference in overall complications between the two groups (6.4% for the ILS vs 5.6% for the ECS, p=0,867, respectively). The barium test showed no difference in radiological measured diameter of the anastomosis after 3 and 12 months (23 vs 24 mm, p= 0,921)

Conclusion: LRYGB with transgastric intraabdominal gastro-jejunostomy is a safe technique with a low anastomotic complication rate. New circular stapling devices such as the 25 ECS are safe and showed no differences with established products.

O.188 Functional Roux-En-Y Gastric Bypass with Outlet Conservation: Outcome of a New Laparoscopic Technique

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Introduction: Roux-en-Y Gastric Bypass is one of the most commonly performed bariatric operations, but its main disadvantage is the impossibility to investigate the gastric remnant, duodenum and biliary tree in case of bleeding or malignancy. We report our experience with a modified technique that allows the endoscopic exam of these sites.

Methods: functional Roux-en-Y Gastric Bypass with outlet conservation creates a narrow passage between the gastric pouch and the excluded stomach, which has the gauge of an endoscope, and is encircled with a Gore-Tex band to prevent dilatation. 87 patients, 63 F and 24 M, were submitted to this operation. Mean follow-up is 2 years. Follow-up rate is 90%. Mean operative time 210 minutes. An endoscopy was done after 1 year to examine the gastric remnant through the outlet.

Results: All operations were done laparoscopically except 6, converted to laparotomy. At 1 year mean BMI decreased from 43.1 ± 5.9 Kg/m² to 32.3 ± 5.2 , at 2 years to 31.4 ± 5.3 and %EWL was 59.5 ± 18.1 . Diabetes improved or healed in 67% of cases, hypertension in 35.7%, sleep apnea syndrome in 60%. Complications: one bleeding from jejunum-jejunostomy on 8th day was treated endoscopically thanks to the possibility to pass the outlet and reach the anastomosis. Two jejunal perforations, one on 5th day and the other after 2 months, required laparotomic revision. It was always possible to investigate the excluded stomach by endoscopy.

Conclusion: though requiring longer operative times, in our experience this modified technique compares favourably to the traditional Roux-en-Y Gastric Bypass for outcome and complications.

O.189 Antecolic versus Retrocolic Gastric Bypass Surgery for Obesity: A Meta-analysis and Systematic Review of the Literature

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Introduction: The most commonly performed operation for obesity is the laparoscopic Roux-en-Y gastric bypass (LRYGB). There are two principle variations of LRYGB, antecolic and retrocolic, depending on the orientation of the Roux limb. The aim of this study is to compare clinical and technical outcomes between retrocolic and antecolic LRYGB procedures.

Methods: An electronic search of PubMed, MEDLINE, Ovid, Embase and Google Scholar was performed utilizing keywords/ phrases agreed in consensus by all authors. Relevant articles were assessed by two independent reviewers. Comparative studies (randomised and non-randomised control trials) of antecolic and retrocolic gastric bypass surgery for obesity were included. Individual case series of antecolic and retrocolic techniques were also identified and assessed. Inclusion and exclusion criteria were clearly

outlined in advance. Data on technical and clinical outcomes was extracted and tabulated by both investigators. Outcomes of interest included technical operative endpoints and post-operative complications.

Results: A total of 12 studies including one RCT were identified. Meta-analysis demonstrated a significant reduction in post-operative small bowel obstruction associated with the antecolic technique (RR 0.33, 95% CI 0.23 – 0.47, fixed effects analysis). Incidence of internal herniation was also significantly reduced in the antecolic patient groups (RR 0.55, 95%CI 0.37 – 0.81, fixed effects analysis), as was overall operative time (WMD 16.39 minutes, 95%CI 22.25 to 10.53, fixed effects analysis).

Conclusions: This study suggests that antecolic LRYGB surgery is associated with a reduction in postoperative small bowel obstruction and faster operative times. Large randomized controlled trials are required to investigate this relationship further.

O.190 Results of Roux-en-Y Gastric Bypass (RYGBP) in Patients Aged 55 or More are at Least as Good as in Younger Patients

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Background: Bariatric surgery is often considered to be less effective and more risky in older patients because their degeral state of health is poorer and because they have more difficulties to make the necessary modifications in their lifestyle.

Methods: Our prospectively maintained database was reviewed and results of RYGBP performed as a primary procedure were compared between patients 55 years of age or older and younger patients.

Results: A total of 165 patients aged 55 years or more were compared to 1265 younger patients. Teh mean age differed by 20 years (38,6 versus 59 years). Older patients had significantly more comorbidities, but the mean initial BMI was similar at 45,6 kg/m². Overall operative morbidity (10 versus 9,1 %), major morbidity (2,7 versus 2,4 %) and mortality (0,8 versus 0 %) were similar. Results at 5 years did not differ significantly with respect to excess BMI loss (EBMIL) (72,9 versus 70,9 %) or total body weight loss (31,9 versus 31,4 %). At 8 years, there was a tendency for even better results in older patients: EBMIL 68,4 versus 64,2 %, BMI 32,6 versus 33,2 kg/m². Improvement in metabolic comorbidities was important in both group, with no significant difference except that more older patients remained with glucose intolerance/diabetes at five years.

Conclusions: RYGBP can safely be recommended in patients aged 55 or more despite current recommendations, many of them cautioning against offering such treatment or against insurance coverage in the older patient group.

O.191 Tensile Strength After Closure of Mesenteric Gaps in Laparoscopic Gastric Bypass: Three Techniques Tested in a Porcine Model

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Background: Internal hernias occur frequently after laparoscopic gastric bypass. We have found no data in Pubmed or Google Scholar on the relative strength of the various techniques available for closing these defects. The present study was performed to obtain such data in order to form a theoretical basis for clinical studies.

Material and methods: Six piglets were operated laparoscopically and four loops of small bowel created. These mesenteric gaps were closed over a distance of 40 mm using I/ running I/ Ethibond suture, II/ Endohernia stapler III/ fibrin glue (Tisseel) and IV/ controls where the mesenteric surfaces were rubbed with a sponge and approximated without further intervention.

After 6 weeks the different segments of the mesentery were excised. The tensile strength was measured using continuously increased traction until the closure ruptured. Ordinary mesentery served as control. The breaking tension and total amount of energy transferred to tissue were registered.

Results: Control areas with rubbed areas developed no adhesions. Suture and staple lines contracted by 30% in length, whereas the fibrin glued lines were even shorter. Median tensile strength was greatest for sutured lines (14 293 mN) and stapled lines (10 798 mN). Fibrin glued lines were significantly weaker (6 780 mN; $p=0.013$ and $p=0.026$), but as strong as ordinary mesentery (4 165 mN).

Conclusion: If on-going controlled randomized trials show closure to be beneficial, further studies should include staples as one of the options for closure of mesenteric defects. The role of fibrin glue needs to be further investigated.

O.192 Surgical Treatment for Type 2 Diabetes Mellitus in Patients with Preoperative BMI Less Than 35 kg / m². Safety and Efficacy with Roux-en-Y Gastric Bypass

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Introduction: In recent years different surgical procedures have emerged for the treatment of type 2 diabetes mellitus (T2DM) in mild obese patients. The aim of this study is to evaluate the results of laparoscopic Roux-en-Y gastric bypass (LRYGB) in T2DM patients with BMI <35 kg/m².

Method: Retrospective cohort study of patients with T2DM who underwent LRYGB at our institution from July 2002 to March 2012. Follow-up was made according to the T2DM remission criteria of the American Diabetes Association.

Results: One hundred and thirty one patients with T2DM and BMI <35 kg/m² were included in this study. Sixty two percent were women, median age was 49.5 years (27–67) and median preoperative BMI was 32.7 kg/m² (IQR 31.4–34.1). Comorbidities were T2DM 100%, fatty liver 68.9%, hypertension 60.6%, dyslipidemia 57.6% and hypothyroidism 17.4%. The most frequent complications were upper gastrointestinal bleeding 3.7%, gastrojejunal stenosis 1.5% and hematoma 1.5%. No mortality was reported in the series. Complete and partial T2DM remission was achieved in 56% and 14.7% of the patients respectively at a median follow-up of 24 month (3–120). When stratified by preoperative treatment, the total and partial remission rate for patients using 1 or less oral hypoglycemic drug (OHD) was 75% and 12%, 5%, for 2 OHD 71.4% and 7.1%, for 3 OHD 66.7% and 0% and for insulin 13% and 20% respectively.

Conclusion: LRYGB is a safe and effective treatment for T2DM and mild obesity. Patients with 1 or less OHD had better outcomes than those requiring 3 OHD or insulin.

O.193 Revision of Gastric Bypass for Failed Weight Loss by Shortening of the Common Channel Improves Foregut and Hindgut Metabolic Response

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Introduction: The response to Roux-en-Y gastric bypass (RYGB) includes a change in foregut (glucose dependent insulinotropic peptide, GIP) and hindgut (glucagon-like peptide-1, GLP-1, and peptide YY, PYY) levels which are thought to affect satiety and energy metabolism. Shortening of the common channel as a revisional procedure for failed weight loss has had some success although the mechanisms of the weight loss are unknown. We examined the metabolic response induced by shortening of the common channel.

Method: 5 patients with <40% excess weight loss approximately 6.3 years after RYGB underwent shortening of the common channel by 50–75%, but no less than 120 cm from the ileocecal valve. Subjects received a 3-hour, 250-ml, mixed meal challenge (400 kcal, 50% carb, 15% protein, 35% fat) before and 3-months after revision. Statistical comparisons of foregut and hindgut hormones were completed by paired t-test.

Results: All patients lost weight at the 3-month interval. Excess weight loss increased from 26.5±9.4 to 40.6±7.5%; $p=0.017$. Revision resulted in a reduction of GIP AUC of 25±15%; $p=0.032$. Conversely, the AUC of hindgut GLP-1 and PYY AUC were increased 26±23%; $p=0.042$ and 36±41%; $p=0.074$. There did not appear to be a correlation between common channel length and weight loss or hormone response.

Conclusion: Shortening of the common channel in patients with poor response to RYGB results in significant weight loss and improvement of key foregut and hindgut hormones thought to mediate the metabolic effects of RYGB. To our knowledge, this is the first study to identify a metabolic response to any revisional procedure.

O.194 Preoperative Diets Before Bariatric Surgery: A Randomized, Single-Blinded, Non-Inferiority Trial

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Background: A preoperative low energy diet is often prescribed to patients before bariatric surgery. The goal of this diet is to lose weight prior to surgery, which would facilitate the procedure, lower complications and improve (short term) weight loss. Most of the commercially available very low calorie diets (VLCD) are protein shakes, which are expensive and moderately tolerated by patients leading to poor compliance. This study investigated if a simple and cheap diet could replace VLCD.

Methods: 200 patients scheduled for a primary laparoscopic Roux-en-Y gastric bypass were included.

Patients were randomized to follow a commercially available VLCD (N=100) or a standard diet (N=100), starting ten days preoperatively. The bariatric team was blinded except for the treating dietician. Study parameters were pre- and postoperative weight (after the diet and after four weeks), tolerance of the diet (questionnaire), operation time and difficulty of the procedure (Visual Analogue Scale (VAS)). Furthermore, patients kept a food diary to evaluate compliance.

Results: Mean age, weight and body mass index before surgery was 40 years, 122.5 kg and 42.6 kg/m² without differences between the two groups. Patients lost a mean of 5.8 kg after VLCD and 6.0 kg after standard diet ($p=0.63$). Weight loss after four weeks was also comparable with 12.1 kg and 12.8 kg ($P=0.30$). Operation time (47 versus 44 minutes) and VAS score (27mm versus 30mm) were not significantly different ($P=0.51$ and $P=0.60$). Postoperative complications occurred in 9.5% of patients without differences between the groups. Tolerance of the standard diet was significantly better on all points of the questionnaire compared to VLCD ($P=0.000$). Patients were very satisfied with the diet and compliance was excellent.

Conclusion: This randomized trial indicates that a standard preoperative diet before bariatric surgery leads to similar weight loss compared to a commercially available and expensive VLCD. Patients satisfaction, tolerance and compliance is however significantly better with a standard diet.

O.195 SurveyMonkey on Laparoscopic Sleeve Gastrectomy (LSG)

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Introduction: LSG has increased. Longterm follow-up is indicated.

Methods: During 4th International Summit, online questionnaire was completed by 130 surgeons experienced in LSG.

Results: Surgeons performed 354.9±453.2 LSGs/surgeon (total 46,133) over 4.9±2.7 yr. LSG was intended as sole operation in 93.1±14.8% of LSGs; in 3.0±6.4%, a second stage became necessary. Most look for hiatal hernia and repair at LSG. 36F bougie was most common (32-44F). Resection of antrum began 4.6±1.2 cm proximal to pylorus. Staple-line reinforcement is done by 74.6% – 57% buttress and 43% oversew. Mean %EWL at 1 yr was 58.4, 2 yrs 56.9, 3 yrs 51.1, 4 yrs 46.6, 5 yrs 44.5, 6 yrs 39.1%. Weight regain indicates further operation may be necessary. For reoperations, preference is RYGB 51%, duodenal switch 26%, resleeve 22%, plication 4%, minigastric bypass 3%, band 2%. Complications were: high leak 1.1%, hemorrhage 1.8%, splenic injury 0.2%, stenosis at lower sleeve 0.9%. Postoperative gastroesophageal reflux occurred in 8.8 ±12.2%, but varied (0-50%). Mortality was 0.68±4.2% – 314. Leaks were treated by CT drain, oversewing if early, NPO, TPN, jejunal tube, distal endoscopic dilatation, clip, glue. Persisting leaks – stents; Roux-loop or total gastrectomy rarely necessary. 88.7% order multivitamins (including D, calcium, iron), 71.6% B₁₂, 67% protein supplement. PPI is ordered by 29.4% for 1 mo, 29.4% for 3 mos, others 1–12 mos.

Conclusion: LSG is comparatively safe. Surveillance is necessary re regain.

O.196 Laparoscopic Sleeve Gastrectomy (Lsg) For the Treatment of Morbid Obesity: Report from an Ifso-Eac Accredited Institution

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Background: LSG is considered effective for the treatment of morbid obesity. Its role as a conversion procedure remains still debated.

Aim: To assess the safety and effectiveness of LSG, with special attention to different outcomes between primary and conversion to procedures.

Patients and methods: From Feb 2005 through Jul 2012, 333 patients, mean BMI 47.77 Kg/m², underwent LSG for morbid obesity at our Institution. 231 were primary procedures, 102 conversions after a failed or complicated restrictive procedure (5 VBG, 97 LAGB). Routine follow-up controls were scheduled at 1, 3, 6 mos and then once a year. Reinhold's criteria were used to assess LSG success or failure.

Statistical analysis: Frequencies and mean values with SD were used to assess patients characteristics and the outcomes of procedures. Differences between primary and conversion to-LSG were assayed with unpaired Student's t-test and Fisher's Exact Test.

Results: Perioperative mortality was zero. 51.1% of patients had %EBL>50% at 2 ys, while 21.1% had a %EBL< 20%. Conversion to LSG showed higher failure (39.93% vs 5.65%) and lower success rates (31.1% vs 68.1%) than primary, longer mean operative time (116.29 ± 44.48 vs 75.55 ± 31.5 mins) and mean hospital stay (5.82 ± 4.47 vs 3.95 ± 1.37 days), higher rates of open approaches (7.8% vs 1.3%), higher overall (16.7% vs 9.1%) and surgery-related complications (14.7% vs 6.9%), more leaks (6.9% vs 0%), more stenosis (2% vs 0.9%), higher post-LSG surgery rate (18.6% vs 3%).

Conclusions: LSG is safe and effective. Conversion to LSG is still safe but appears less effective than primary.

O.197 Transit Bipartition Empowers Sleeve Gastrectomy. Consistent Good Results over a Decade

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Background: Sleeve Gastrectomy (SG) became a very frequent bariatric surgery but for some patients SG is not enough, even in the short term. Transit bipartition (TB), an easy surgical procedure, was designed to improve SG results mainly through neuroendocrine mechanisms, not through malabsorption.

Method: Since 2003, over 3,000 patients were submitted to a SG+TB, with 1,192 registered in an electronic databank for statistics. After a SG, a laterolateral gastroileal anastomosis is created in the antrum to obtain early distal bowel hormonal stimulation; the transit through the duodenum however is maintained, avoiding blind loops and minimizing malabsorption. A major part of duodenal flux is deviated to the ileum. The stomach remains with two exits. Jejunum is laterally anastomosed to ileum at 80cm to 120 cm from the ileocecal valve.

Results: Follow-up: 1 to 103 months. For a SG+TB average EBML% is 75.5% in the fifth year, with major improvement in pre-surgical comorbidities, especially diabetes (85% of remission). Radiographic studies show nutrient transit preferentially through gastroileostomy. Three deaths occurred (3/1192-0.25%). Other surgical complications were 5.5%, all well resolved. Protein malabsorption does not occur; diarrhea and flatulence are not so frequent as in a classic BPD. Most patients present no symptoms at all.

Conclusions: SG+TB is a simple procedure that provokes early nutrient stimulation to distal bowel, while simultaneously reduces duodenojejunal activity. TB avoids blind loops and minimizes malabsorption. Weight and comorbidities are very much improved. Diabetes is improved significantly without duodenal exclusion. TB is an excellent way to empower a SG.

O.198 Mechanical Theory of Fistula in a Sleeve Gastrectomy: An Experimental Study of the Resistance of the Linear Gastric Stapling

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Introduction: Few studies have evaluated the surgical stapling including colorectal surgery.

Objectives: To understand the mechanisms of appearance of a dehiscence of the staple line during a sleeve-gastrectomy, we analyze in this study the effect of the height of the staple line and the using a tissue reinforcement on the onset of experimental fistula.

Methods: This is an experimental study on the porcine model. The sleeve-gastrectomy were performed ex vivo. The pressure of developing a fistula was assessed by blowing air into the gastric tube immersed in water. The first experiment compared 8 sleeve gastrectomies with the use of green staple cartridges (three rows of 4.8 mm staples) and 8 sleeve gastrectomies combining green and blue cartridges (three rows of 3.5 mm staples). The second experiment used the same sequence with a reinforcement by an absorbable film (Biosyn, Covidien) in 5 sleeve gastrectomies with green staples (Duet TRS, three rows of 4.8 mm staples) and 5 sleeve gastrectomy with joint use of green and blue cartridges (Duet TRS, Covidien, three rows of 3.5 mm staples). The third experiment used the latest generation Tri-Staple comparing 5 sleeve

gastrostomies with gray cartridges (three rows of staples of different height : 4 mm, 4.5 mm and 5 mm) and 5 sleeve gastrostomies with joint use of gray and purple cartridges (three rows of staples of different height: 3 mm, 3.5 mm and 4 mm). The outcome is the pressure in mmHg experimentally to create a fistula. Data are reported as mean and percentage. The nonparametric tests are used for data analysis.

Results: In all 3 experiments, regardless the utilized type of staple, the location of the fistula is located in the upper part of the staple line in more than 80% of cases. Experiment 1 shows that the occurrence of a fistula requires greater pressure in groups loaders green and blue (mean = 122.4 mmHg (108.4, 136.5)) compared to the group of green loaders (mean = 94.2 mmHg (84.2, 104.3)) so highly significant ($p = 0.0017$). Experiment 2 shows similar results but with higher pressure occurring with chargers green and blue (mean = 189 mmHg (174.5, 203.5)) that 'green only with chargers (mean = 152.3 mmHg (134.1, 170.5)); the difference is also significant. Experiment 3 shows no significant difference ($p = 0.62$) between gray chargers ($m = 130.3$ mmHg (119, 141.6)) and chargers gray and purple ($m = 134$ mmHg (121.7: 146.3)).

Conclusion: Staple height used is a determining factor in the emergence of a fistula on an experimental sleeve-gastrostomy. Staples low heights are more resistant to pressure. The buttressing of the staple line increases the resistance.

O.199 Single Incision Laparoscopic Sleeve Gastrectomy Versus Multiport Laparoscopic Sleeve Gastrectomy: Analysis of 80 Cases in a Single Center

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Through efficacy and improved safety laparoscopic multiport sleeve gastrectomy has emerged as an important and broadly available treatment option for people with severe and complex obesity. Since a single incision laparoscopic sleeve gastrectomy would be less invasive we applied this superior surgical technique on a selected number of patients enrolled into our minimally invasive bariatric programme.

Methods: A retrospective review of prospectively collected data from 80 morbidly-obese patients who qualified for single incision sleeve gastrectomy (SILS-G) or laparoscopic multiport sleeve gastrectomy (LAPS-G) was performed from 01/2011 to 05/2012.

Results: SILS-G and LAPS- gastrectomy was performed in 40 patients, respectively. All patients were female. Mean age was 41 (19–73) years (SILS-G: 37 (19–62) vs LAPS-G: 43 (24–73) $p=n.s.$). Preoperative body mass index was 40.8 (35.1–45.0) kg/m² in the SILS-G group and 43.8 (35.0 – 47.8) kg/m² in the LAPS-G group ($p=n.s.$). Median % excess weight loss (%EWL) was comparable in both groups (SILS-G: 57.2% LAPS-G: 53.7%) at 6.6 month after surgery. Complication rates were low in both groups (leakage: SILS-G: 2.5%, LAPS-G: 0%; bleeding SILS-G: 2.5%; LAPS-G: 2.5%, trocar site hernia 0% both groups). Patients operated with single incision laparoscopy had a significant better cosmetic outcome as assessed by a scar-satisfaction assessment questionnaire ($p<0.01$).

Conclusions: Single incision laparoscopic sleeve gastrectomy is a feasible and save operative procedure which leads to a significant reduction of total operative time when compared with a multiport access procedure. Further potential benefits associated with single incision laparoscopic surgery remain to be investigated objectively.

O.200 Laparoscopic Sleeve Gastrectomy as the First Stage of Two Stage Bariatric Procedure in the High-Risk and Super-Super Obese Group. Do They Eventually Proceed to the Second Stage?

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Background: Laparoscopic Sleeve Gastrectomy (LSG) is a widely accepted procedure in the high risk and the super-super obese patient population as a first stage of two stage bariatric procedure to minimize the morbidity and mortality. However, some LSG patients do not actually proceed to the planned second stage procedure due to various reasons.

Methods: Prospectively collected data of patients who underwent LSG as part of two stage procedure due to their high risk medical conditions and high OS-MRS score was analyzed retrospectively in terms of demographics, excess weight loss (%EWL), follow-up, co-morbidities and complications. Similar data was analyzed in patients who eventually underwent completion second stage procedure either laparoscopic Roux en Y gastric bypass (LRYGB) and Duodenal Switch (LDS).

Results: A total of 103 patients who were having either high risk medical conditions or high OS-MRS score underwent initial LSG. The median BMI and weight were 60.6 (range 40.2 to 84.5) and 170.4kg (range 105.6 to 251) respectively. The median age was 49 years (range 25 to 70). The male:female ratio was 1.01:1. The median OS-MRS before and after LSG were 3 and 2 respectively. Of the 103 patients, 43 patients (41.7%) did not proceed to the second stage procedure after having LSG due to various reasons (Good weight loss/resolution of co-morbidities/patient's choice – 21.4%, deemed not fit due to medical conditions – 4.9%, surgical reasons – 1.9%, Mortality – 1 patient, social reasons – 1 patient and lost to follow-up – 9.7%). 51 patients (49.5%) and 9 patients (8.7%) underwent second stage LRYGB and LDS respectively. The median time interval between LSG to a second stage procedure was 15 months. The median EWL in the "LSG only" group was 45.5% (range 13.2 to 100). The median BMI of 60.6 came down to 44 after LSG. The median EWL in the "second stage procedure" group was 59.1% (range 14.1 to 95). The median BMI of 61.2 in the second stage group came down to 46 after LSG, which further came down to 39.5 after the second stage procedure. Of the 36 diabetics (35%), resolution occurred in 47% and improved in 53%. Of the 67 hypertensives (65%), resolution occurred in 25%, improved in 58% and ISQ in 17%. Obstructive sleep apnoea resolved and improved in 34% and 66% of patients respectively out of 44 patients (42.7%).

Leak and mortality rates were 1% each. The in-hospital morbidity rate was 5.8% (Bleeding requiring transfusion only, respiratory failure requiring ventilation).

Conclusion: LSG is a safe and effective bariatric procedure in the high risk and the super-super obese patient population as a first stage of two stage procedure. A subset of patients eventually might not need to proceed to the second stage due to patient satisfaction driven by adequate weight loss and resolution of co-morbidities.

O.201 Mid-Term Outcome of Revisional Laparoscopic Sleeve Gastrectomy for Failed Adjustable Gastric Banding and Vertical Banded Gastroplasty

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Introduction: Laparoscopic adjustable gastric banding (LAGB) and Vertical banded gastroplasty (VBG) are common bariatric procedures with a failure rate of 20% and 50% respectively. Laparoscopic sleeve gastrectomy (LSG) is gaining consensus not only as a primary bariatric operation but also for the management of failed LAGB and VBG. Aim of this study is to assess the feasibility, safety and mid-term outcome of revisional LSG in this set of patients.

Materials and Methods: From 2004 to 2012, 31 patients underwent revisional LSG in our department, 29 after LAGB and 2 after VBG. The mean interval between primary procedure and LSG was 50 months (range 1–180). In six of the 29 LAGB patients, the band had been previously removed for related complications. The other 23 patients underwent concurrent band removal and LSG.

Results: Mean BMI at LAGB/VBG operation was 46 ± 7.7 kg/m². Mean lowest BMI after primary procedure was 38.9 ± 6.4 kg/m² with a mean EWL of 32.9 ± 21.2%. At

revisional LSG mean BMI was $46 \pm 9.3 \text{ kg/m}^2$ and had decreased to $33.4 \pm 5.6 \text{ kg/m}^2$ after a mean follow-up of 24 months, with a mean EWL of $64.7 \pm 29.1\%$. All the procedures were completed laparoscopically. Mean operative time was 125 minutes Mortality was nihil. Four post-operative complications (9.6%), 2 bleedings and 2 leaks, occurred in three patients and were all treated conservatively.

Conclusion: Revisional LSG seems to be an effective option for the management of failed LAGB/VBG, providing a considerable additional excess weight loss, although with greater complication rates than primary LSG.

O.202 Prolonged Contact of Food with the Distal Small Bowel Mucosa Following Sleeve Gastrectomy

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Introduction: To evaluate the role of Laparoscopic Sleeve Gastrectomy (LSG) in gastrointestinal physiology.

Method: We evaluated 15 morbidly obese patients who underwent LSG before and four months after LSG. After consumption of a semisolid radiolabeled meal gastric and intestinal transit times were studied. Particularly the times of: Maximal Intestinal filling (T Int max), 10% Terminal Ileum filling (T II 10%), Duodenal to Terminal Ileum transit (T DIt), Cecal filling initiation (T Cfin) and ileocecal valve transit (T ICVt) were studied. Additionally, fasting and meal stimulated release of ghrelin, PP, PYY and GLP-1 were measured before and 6 months after SG.

Results: BMI notably decreased 4 months postoperatively ($P < 0.01$) and glucose homeostasis significantly improved. TG lag and TG were decreased after LSG as well as T Int max, indicating faster gastric emptying and intestinal filling. T DIt and T II 10% also decreased as small bowel transit time accelerated and the meal reached the terminal ileum more rapidly. Contrary opening of the ileocecal valve and food transit through it were delayed, with postoperative increase in T Cfin and T ICVt respectively, therefore resulting in prolonged contact of food with the distal small bowel mucosa. Additionally, fasting and postprandial levels of orexigenic ghrelin were remarkably decreased. A significant increase in postprandial levels of PP, GLP-1 and PYY was also observed.

Conclusions: These significant changes in gut motility and in the production of orexigenic and anorexigenic gut hormones may be responsible for the metabolic effect of SG occurring before substantial weight-loss.

O.203 GERD and Sleeve Gastrectomy

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Background: Laparoscopic sleeve gastrectomy (LSG) has gaining acceptance as a primary weight loss surgery because there has been long term data of efficacy on weight loss and advantage of low nutritional imbalance compared to bypass surgery. But after LSG, high incidence of neo-Gastro-esophageal reflux disease (25-40%)(GERD) remains as a challenging problem.

Objective: To evaluate incidence of neo-GERD after LSG.

Material and Methods: A retrospective review of 172 patients who had no GERD before surgery among 181 consecutive patients undergoing LSG for morbid obesity from April 2009 to August 2012 was performed.

Proton pump inhibitor (PPI) was used for 2 months after surgery to all patients. The definition of neo-GERD is the patient had undergone prescribed PPI after 2 months from surgery for reflux symptom or existence of endoscopic finding of gastroesophageal reflux.

Results: A total of 181 patients, 124 women and 57 men, were identified, with a mean age of 33 years (range 14–61). The mean weight and body mass index was 105 kg (range 71–212) and 39.5 kg/m^2 (range 30–70). The mean follow-up time was 10 months. 57 patients (33%) had clinical symptoms and endoscopic findings of GERD. Among 57 patients, endoscopic was performed to 23 patients. And the result of endoscopy finding was as follows; 5 patients had Los Angeles Classification grade (LA) - M, 6 had LA-A, 10 had LA-B, 1 had LA-C, and 1 had LA-D. PPI had undergone prescribed for mean 3 months (range 2–28), and 2 patients had taken PPI for 24 months, 28 months on demand.

Conclusion: The prevalence of GERD after LSG was similar to existing literature result at our institution. Additional studies evaluating esophageal manometry ambulatory 24-hours pH-metry, and risk factors are needed to better evaluate the effect of LSG on gastroesophageal reflux symptoms.

O.204 The Effect of Three Most Performed Bariatric Procedures: Roux-en-Y Gastric Bypass vs. Sleeve Gastrectomy vs. Gastric Band

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Introduction: In the past several types of bariatric procedures were performed to establish sustained weight loss in morbid obese patients. Currently, laparoscopic Adjustable Gastric Band (LAGB), Roux-en-Y Gastric Bypass (LRYGB) and Sleeve Gastrectomy (LSG) are the most performed procedures. The aim of this present multicenter retrospective matched cohort study was to investigate the effect of LSG, LRYGB and LAGB.

Method: Patients who underwent a primary LSG, LRYGB or LAGB in one of the 2 bariatric centers in the period of 2006 – 2011 were eligible for analysis. Patients were matched for sex, age (± 2 years) and BMI (± 3). Primary outcome was percentage excess weight loss (%EWL).

Results: In total 699 patients (233 in each group) were included for analysis. There were 576 female (82%) patients and mean age was 40.2 ± 9.9 years. At baseline preoperative BMI and weight were both lower for LAGB and LSG, compared to LRYGB, respectively ($p < 0.01$). %EWL after 1, 2, 3 and 4 years after LAGB were 37.3 ± 17 , 44.7 ± 20 , 43.6 ± 22.6 , $39 \pm 24\%$; after LSG 76.6 ± 23.6 , 76.1 ± 25.3 , 66.4 ± 26.2 , $57.4 \pm 17.4\%$; and after LRYGB 70.6 ± 20.7 , 72.2 ± 23.3 , 70.9 ± 27.4 , $72.1 \pm 20.3\%$, respectively. Compared to LAGB, there was significant higher %EWL after LSG and LRYGB at all time points. After 4 years, LRYGB had higher %EWL compared to LSG ($p < 0.05$).

Conclusion: On the mid-long term, LSG and LRYGB resulted in higher %EWL compared to LAGB in morbid obese patients. LSG had similar weight reduction compared to LRYGB, however, after 4 years more weight regain was observed. Longer follow-up should corroborate these findings.

O.205 4 Year of Laparoscopic Gastric Sleeves (LS) Compared to Gastric Bypass (LGB). One Year Follow Up. Similar % of Excess Weight Loss (%EWL) and BMI Drop with Lower Risk of Long Term Complications

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Introduction: In our practice, Laparoscopic Sleeves (LS) are gradually increasing in number. We believe that we have optimized the technique to the point that the results are practically the same to the ones achieved with LGB. We perform a tight sleeve, starting at 2cm from the pylorus. We accurately dissect the precardial fat pad and the fundus to achieve exposure of the Angle of Hiss, being this step, in our opinion, necessary to avoid accidental injury to the esophagus, responsible of apical leaks. We do not use reinforcing materials nor drains or post op swallow tests. We have collected 1 year followup data of 4 years experience from one surgeon of LS an LGB and calculated the %EWL and the average BMI loss.

Methods: Comparison of 1 year outcome of a consecutive series of LS(122) and LGB(153) in a 4 year period. We have excluded cases of conversion/revisions.

Results:

	Average %EWL	Average BMI Drop
LS	54.77%	13.33 kg/m ²
LGB	57.49%	14.41 kg/m ²

Conclusions: Our results demonstrate that LS achieves almost the same result of LGB at 1 year. We are collecting data on results at 2 and 3 years. The initial impression though is that given the higher risk of long term complications in LGB, LS is quicker and easier to perform, and gives the same weight loss at 1 year, provided that it is performed correctly and that patients are warned about the transitory partial dysphagia that they will inevitably face with a tight, hence effective, sleeve.

O.206 Body Composition After Sleeve Gastrectomy

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Introduction: Sleeve gastrectomy is an increasingly popular form of weight loss surgery, with reports suggesting weight loss outcomes equivalent to gastric bypass in the medium term. Significant weight loss is seen in the first six months after surgery. There are concerns that this may reflect sarcopenia, or loss of fat free mass (FFM). We set out to examine changes in body composition after surgery using dual-energy X-ray absorptiometry (DXA).

Methods: Consecutive patients presenting for surgery in 2011 were offered DXA pre-op and 6 months post-op. Patients underwent surgery in the routine fashion, and all received intensive dietetic support in the pre and post-operative period.

Results: Twenty-seven patients (23 female) aged 25–58, mean weight 121 kg (100–146), mean BMI 45 (38–58) were recruited. There were no operative complications. At six months the average weight loss was 29.6 kg (17–44), with mean %EBWL 52.2 (31–88). Overall average fat loss was 21 kg and FFM loss was 11.3 kg. The average ratio of fat:FFM loss was 2.1. In older and in diabetic patients this ratio was 1.6. Average fat loss was 9.2 kg in the trunk and 4.5 kg in the legs; muscle loss was 5.6 kg in the trunk and 1.2 kg in the legs. Diabetics lost less fat in the trunk (3.8 vs 10.7 kg). Older patients lost more muscle in the legs (8.2 vs 4.1 kg).

Conclusion: Early weight loss after sleeve gastrectomy can be associated with sarcopenia. This should be considered especially in the older and diabetic populations.

O.207 The UK National Bariatric Surgery Registry: The Second Report

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The UK National Bariatric Surgery Registry (NBSR) was launched in January 2009 with the first report of 7045 patients published in 2011. It provides a comprehensive analysis of short and medium term complications of bariatric surgery in the United Kingdom. Although data entry was recommended, it was not mandated. Despite this, it was estimated that the registry captured 80% of UK procedures performed in 2009 and 2010. This early report demonstrated that surgery in the UK was safe, resulted in improvement or resolution of most obesity related co-morbidities with excess weight loss figures comparable with internationally reported results.

The Royal College of Surgeons of England has advised that complete entry of all bariatric procedures represented Good Medical Practice standards of the General Medical Council. BOMSS Clinical Standards also include this recommendation. From 1st April 2013 submission of data will be mandatory for bariatric surgery providers in the NHS and data will be de-anonymised so that outcomes on an intention-to-treat basis can be tracked, thus avoiding publication bias.

The NBSR will be re-analysed at the end of March 2013 and the committee wish to present these findings at IFSO 2013. The database now contains 30,000 patients entered by 145 surgeons in 137 hospitals. Data will be examined to identify changes in UK surgical practice, improvement in co-morbidities and complication rates for each surgical procedure. Comparison with results in the first report will be made to show trends. The registry structure, dataset, functionality, the challenges and learning points will also be presented.

O.208 Results of More Than 6000 Patients with Sleeve Gastrectomy-Data Analysis from the Quality Assurance Study of the Surgical Treatment of Obesity in Germany

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Background: Since January 1st 2005, the situation of bariatric surgery has been examined in Germany. All data are registered prospectively in cooperation with the Institute of quality assurance in surgery at the Otto-von-Guericke University Magdeburg.

Methods: The data registration occurs in an internet online data bank. Data collection on results of Sleeve Gastrectomy has been started in 2006. Follow up data were collected once a year. Participation at the quality assurance study is voluntary.

Results: Since 2006 more than sleeve gastrectomies were performed at more than 100 hospitals. Number of procedures has been increased from 14 in 2006 to 1537 in 2010. Initially leakage rate was 7% in 2007. Leakage rate dropped down to 1.9 in 2011. Mean age of the patients was 43.6 years and mean BMI was 52.1 kg/m². BMI and comorbidities are significant higher in male patients than in female.

Conclusion: Sleeve gastrectomy becomes more and more popular in Germany. But postoperative complication rate is still high. Data on Nationwide Survey on Bariatric Surgery in Germany show significant differences in preoperative comorbidities and complication rates between male and female patients. Gender specific aspects are necessary to evaluate further to optimize patient's selection and to reduce specific postoperative complications.

O.209 Data of the Russian National Bariatric Registry in 2012

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Introduction: This is the second annual report of Russian National Bariatric Registry collecting database from Russian centers practicing in bariatric and metabolic surgery.

Methods: The survey regarding amount and kinds of bariatric operations was sent to 48 centers countrywide recognized by The Society of Bariatric Surgeons of Russia. We have received totally 22 responses from 42 surgeons. **Results:** A total number of 993 bariatric operations were performed in Russia by 42 surgeons - respondents in 2012. Open surgery - 13,5%, laparoscopic - 86,5 %. Distribution of the operations: sleeve gastrectomy 427 (43,0%), adjustable gastric banding - 299 (30,1%), gastric bypass 177 (17,8%), biliopancreatic diversion (duodenal switch) - 53 (5,3%), other operations (gastroplasty, BPD-Scopinaro, vertical banded gastroplasty, bowel reconstructions etc.) - 37 (3,7%). Secondary operations were performed in 130 patients. It is known about 2 (0,2%) early postoperative death (pancreonecrosis after gastric bypass and perigastric abscess with peritonitis after LAGB) and 1 death after intragastric balloon placement.

Conclusions: Total number of reported operations has not changed (989 in 2011). Total share of laparoscopic operations has increased from 76,5 % to 86,5%. Sleeve gastrectomy has become the most popular operation (increased from 33,9% in 2011 to 43,0% in 2012), displacing adjustable gastric banding. Number of biliopancreatic diversions has decreased almost twofold (from 9,9% to 5,3%). Postoperative mortality has not changed.

INTEGRATED HEALTH

IH.01 Are Gut Hormones Responsible for the Decrease of Appetitive Behaviour for Sweet and Fatty Foods After Gastric Bypass Surgery?

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Introduction: Gastric bypass surgery (RYGB) decreases preference for sweet and fatty foods, but the underlying mechanism is not known. This study aimed to investigate the role of the exaggerated satiety gut hormone release on appetitive reward of sweet and fatty taste after RYGB.

Method: 13 patients that have undergone previous RYGB surgery (>6 months) and 13 normal weight controls participated in a double-blind placebo-controlled

trial comparing the effect of subcutaneous injections of somatostatin analogue (octreotide) which blocks satiety gut hormone responses, and saline (control) on the appetitive reward value of sweet-fat candies. Appetitive reward was measured using the progressive ratio task where participants have to do progressively more work by clicking a mouse button each time to obtain a candy reinforcer.

Results: In this ongoing study, 9 RYGB patients and 5 control subjects have already been assessed. There were no statistically significant differences in the median of total number of clicks between normal weight control and RYGB patients in the saline condition (p=0.89). The median of total number of clicks was not different between saline and octreotide conditions (p=0.62) in control subjects but showed a trend to be higher in octreotide compared to the saline condition in RYGB patients (p=0.09).

Conclusion: The preliminary results of this novel mechanistic study suggest that gut hormones may play a physiological role in the reduction of the appetitive reward value of sweet/fatty taste. The understanding of this mechanism and its mimicry may lead to effective non-surgical treatments that aim to promote healthier food preferences in obesity.

IH.02 Post – Operative Nutritional Management of Morbidly Obese Patients with Compromised Renal Function

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Aim: The aim of this study is to provide an overview of the nutritional management of patients with compromised renal function that have undergone bariatric surgery.

Methods: This is a retrospective review of 10 morbidly obese patients with compromised renal function who underwent bariatric surgery. Anthropometric measurements, serum creatinine, electrolytes, uric acid phosphorus, total protein, serum albumin, iron, vitamin d3, calcium, UN and urine for microalbuminuria were evaluated. LSG was conducted in all patients. Management of these patients, through the liquid phase and transition to solid phase has been studied and reported.

Results: The mean BMI was 42kg/m² and mean age was 50 years. The female to male ratio was 1:7. 7 of these patients were diabetic and hypertensive. 3 patients were only hypertensive. Pre-operatively patients were given a modified protein, potassium and sodium diet. Fluid restriction was imposed where required. Patients were started on clear oral liquids day 1 post operatively. Renal specific nutritional supplements were administered. Multivitamins, iron, calcium, vitamin D3 were also supplemented simultaneously as required. The mean excess weight loss % at 1 year was 53.746 %.

Conclusion: Bariatric surgery is effective in the treatment of metabolic syndrome in patients with renal disease. These patients should be monitored closely and regularly to prevent nutrient deficiencies, protein malnutrition and dehydration and to maintain a delicate balance of fluid, protein, sodium and potassium. The shift in this balance can have catastrophic complications and cause further deterioration of the renal function. The bariatric Nutritionist forms an important prong in the management of patients with compromised renal function undergoing bariatric surgery.

IH.03 Role of Nutritionist in the Management of Leaks Post Sleeve Gastrectomy

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Aim: The aim of this study was to provide an overview of the nutritional management of patients who were diagnosed with a leak post Laparoscopic sleeve gastrectomy

Methods: This was a retrospective study of 10 patients who were managed for a leak post laparoscopic sleeve gastrectomy. Anthropometric measurements, total protein, serum albumin, serum iron, vitamin B12, vitamin D3 were evaluated and recorded. The type of feed, route of feeding (oral or tube feeds), frequency of feeds, fluid intake and maintenance of nutritional parameters have been studied and reported.

Results: The median age of the patients were 31 years (range 21–50 years) and median BMI was 44.48 years (range 34.84–52.88 years). Patients were fed via naso jejunal tube or orally after placement of an endoluminal stent. Patients were tube fed for 3–5 weeks and given hypocaloric bolus feeds. Rate and frequency of feeds were adjusted according to tolerance. Multivitamins, iron, calcium, Vitamin B12 and Vitamin D3 were supplemented as required.

Conclusion: Selection of the most appropriate type of feed to provide adequate protein for healing but also to avoid excess provision of calories is vital. Patient and disease specific feeds should be administered keeping in mind associated comorbidities like diabetes, renal and liver disease. Nutrition support should be one of the main arms of the multidisciplinary team in order to provide the best outcome for the patient.

IH.04 Pregnancy After Bariatric/Metabolic Surgery – A Study on Weight and In-Take of Nutritional Supplements

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Background: Many women who undergo bariatric/metabolic surgery are in child-bearing age and have not finished their family planning at the time of operation. Therefore, pregnancy after bariatric surgery is an important area requiring interdisciplinary cooperation. The aim of this prospective study is to investigate the influence of pregnancy on weight and in-take of nutritional supplements after bariatric intervention. This study identifies the relevance of nutritional care.

Methods: A quantitative questionnaire was used for 24 Laparoscopic Adjustable Gastric Banding (LAGB) and 11 Roux-en-Y Gastric Bypass (RYGB) patients who gave birth to a child after bariatric surgery. The weight before, during and after pregnancy and the behaviour of taking supplements before and during pregnancy was investigated.

Results: There was no significant difference in the weight gain of LAGB and RYGB patients during pregnancy ($p=0,642$). The comparison of weight gain during pregnancy in LAGB patients with and without band adjustment showed analogous results without statistical significance ($p=0,212$) but weight loss after childbirth was significantly better in the non adjusted group ($p<0,01$). Nearly half (48,6 %) of the patients had a weight gain during pregnancy greater than non operated women. The compliance with intake of supplements was low and it did not change significant when the patients found out they were pregnant ($p=0,146$).

Conclusion: Dietetic therapy plays an important role in the care of pregnancy after bariatric surgery. Dietetic management of this patient group ensures adequate nutrient intake by improve compliance with supplements and in prevention of excessive weight gain during pregnancy.

IH.05 Iron Deficiency in Preoperative Period of Bariatric Surgery

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Hypothesis: 1) a significant percentage of morbidly obese patients present iron deficiency in the preoperative period. 2) Intravenous iron supplementation in preoperative period for patients with iron deficiency is effective in anemia prevention.

Material and Methods: Observational prospective Study that included 67 morbidly obese patients submitted to bariatric surgery. The population was divided in the preoperative period (pre OP) according to iron deficiency condition or absence of it and the postoperative evolution was analyzed (post OP). Patients with iron deficiency were supplemented with ferric carboxymaltose 500mg intravenous (IV) and evaluated in post OP.

Results: (19.4%) 13 patients presented iron deficiency in pre OP, and 4 anemia. (80.6% 54) patients did not present iron deficiency. Patients with iron deficiency in pre OP presented: Hemoglobin: $12.46 \text{ g/l} \pm 1.27$; Transferrin saturation: $13.64\% \pm 5.20$ and ferritin: $70.64 \text{ ng/ml} \pm 84.79$. In post OP it was observed an Hb decrease ($11.92 \text{ g/l} \pm 1.24$; $p>0,05$) and ferritin increase ($136 \text{ ng/ml} \pm 157.96$; $p>0,05$). In patients with iron deficiency without IV iron supplementation ($n=7$) the HCT was $39.9\% \pm 2.7$ with decrease in post OP ($35\% \pm 2.9$; $p<0,05$). IV supplementation in patients with iron deficiency ($n=5$) increased HCT post OP ($40.2\% \pm 1.6$) with respect to pre OP ($37.8\% \pm 2.9$; $p: 0.041$).

Conclusions: 1) Almost 20% of the patients presented iron deficiency in pre OP. 2) Treatment with IV iron seems to be effective in preventing development of anemia in patients with iron deficiency previous to surgery.

IH.06 Preoperative Respiratory Physiotherapy Can Improve Oxygenation During Bariatric Surgery

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Introduction: Morbidly obese patients are at increased risk of perioperative hypoxemia, due to decreased lung volumes and chest wall compliance, raised intraabdominal pressure and muscle inefficiency. The aim of the study is to check the effects of a preoperative respiratory physiotherapy program on the perioperative oxygenation in morbidly obese patients undergoing laparoscopic bariatric surgery.

Methods: 47 consecutive morbidly obese patients were randomized in Control Group (CG, $n=23$) and Physiotherapy Group (PTG, $n=24$). PTG received a respiratory physiotherapy program which included lung re-expansion and respiratory muscle training, 20 min a day, 30 days before surgery. We recorded FVC, FEV1, PiMAX, PeMAX before and after training. PaO₂/FIO₂ ratio was measured at four time points: 1) 5 min after induction of anesthesia, 2) 15 min after pneumoperitoneum withdrawal, 3) 1 h after surgery, 4) 24 h after surgery. The statistical study was performed with Mann–Whitney and Wilcoxon tests.

Results: Intragroup PTG comparisons showed significant PiMAX ($p=0.001$), and PeMAX ($p=0.01$) increases after the training program. The PO₂/FIO₂ ratio was higher for the PTG group at all-time points, with significant differences at Time 1 ($p=0.04$) and Time 3 ($p=0.002$).

Conclusion: These data suggest that a preoperative respiratory physiotherapy program on morbidly obese patients could enhance respiratory muscle strength and passive respiratory mechanics, thus improving perioperative oxygenation.

IH.07 Enhanced Recovery After Bariatric Surgery (ERABS) Versus Conventional Perioperative Care in Bariatric Surgery

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Introduction: Due to the increasing incidence of morbid obesity, the demand for bariatric surgery is increasing as well. Therefore, methods for optimizing

perioperative care for improvement of surgical outcome and to increase efficiency were recommended. The aim of the present study was to objectify the effect of the Enhanced Recovery After Bariatric Surgery (ERABS) program in morbid obese patients undergoing primary laparoscopic Roux-en-Y Gastric Bypass (LRYGB) surgery.

Methods: Prospectively collected peri-operative data of two groups of 75 consecutive morbid obese patients (in total 150 patients) who underwent a LRYGB were analyzed. First group was operated in the period of January 2011 – April 2011 (conventional care group, CG) and the second group from April 2012 – June 2012 (ERABS group). These groups were matched for age and sex. Principles of ERABS were teamwork, standardizing intra- and postoperative protocols, reducing additional interventions and stimulating patients self-support.

Results: Baseline patient characteristics for age, sex, weight and ASA classification were similar ($p>0.05$) for CG and ERABS. The total time consumption for surgery, from arrival at the operating room (OR) to the arrival at the recovery, was reduced from 119 to 82 min (31%, $p<0.001$). Mean hospitalization was reduced from 65:27h to 42:41h (35%, $p<0.001$). Perioperative complications were similar for both groups.

Conclusion: Introducing of an enhanced recovery program for morbid obese patients undergoing bariatric surgery resulted in faster recovery and shorter hospital admission. Furthermore, increasing the efficiency on the OR, may able to increase the production volumes without compromising patients safety.

IH.08 Early Resolution of Nephrotic Syndrome (Iga Nephropathy) After Laparoscopic Sleeve Gastrectomy: O.R.G. Resolved

PRESENTER: S. John¹

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Obesity related glomerulopathy (ORG) is increasingly being reported in literature as a potentially reversible form of nephropathy. This form of nephropathy is associated with morbid obesity, proteinuria and renal biopsy findings of glomerulosclerosis which can be associated with renal impairment. Weight reduction has been noted to be associated with improvement of this form of nephropathy. Bariatric surgery is the most effective way of achieving long-term weight reduction in the morbidly obese. We present a case of IgA nephropathy with features of nephrotic syndrome associated with morbid obesity, diabetes and systemic hypertension in a 22 year old lady. Following laparoscopic sleeve gastrectomy, the patient achieved significant weight reduction with early marked decrease in proteinuria, hyperglycaemia and blood pressure. With the growing evidence in literature we propose that bariatric procedures are an excellent tool to reverse obesity related glomerulopathy (ORG).

IH.09 Barriers to Weight Loss Surgery

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Background: Severe obesity is increasing at an alarming rate throughout the world. However, few individuals with severe obesity (~1%) elect to have bariatric surgery in spite of the long-term success and metabolic effectiveness of these procedures. In this report, we have surveyed severely obese individuals regarding barriers to bariatric surgery.

Methods: The study population included groups of severely obese individuals who attended a free lecture held weekly to inform the public about bariatric

surgery. Attendees were asked a series of questions in an effort to identify barriers to surgery.

Results: Among the severely obese groups, 2/3 ranked surgical safety, i.e. a fear of death or serious complications, as the primary barrier to bariatric surgery. Weight regain (short-term durability) was the second most indicated barrier to surgery. The third issue the population ranked as a barrier to surgery was surgery effectiveness or the personal notion that the surgery would not induce sufficient weight loss. High cost was the fourth ranked barrier to surgery. The population also identified their most important reasons for wanting to lose weight. All individuals ranked health issues as the number one reasons for wanting to lose weight, followed by physical mobility, quality of life, and cosmetics.

Conclusions: Major barriers to bariatric surgery among individuals with severe obesity include safety fears, concerns of short-term durability and personal effectiveness, and high cost. Addressing these issues through patient education and marketing may increase the numbers of severely obese individuals who elect to have bariatric procedures.

IH.10 Postoperative Rhabdomyolysis After Bariatric Operation

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Introduction: Rhabdomyolysis is the rapid breakdown of skeletal muscle. Creatine kinase (CK) levels are typically markedly elevated, and muscle pain may be present. The severity of illness ranges from asymptomatic elevations in serum muscle enzymes to life-threatening disease associated with extreme enzyme elevations and acute kidney injury. Postoperative rhabdomyolysis is diagnosed by CK levels over 1000 IU/l. The purpose of this study is to estimate the frequency of postoperative rhabdomyolysis and possible risk factors after bariatric operations.

Method: 62 patients (24 men and 36 women) underwent a laparoscopic bariatric operation, 8 total vertical gastric plication (TVGP) and 54 sleeve gastrectomy (SG). CK was measured the first postoperative day.

Results: 66% of the patients presented rhabdomyolysis the first postoperative day. Based on this, they were divided in two groups (see table). The statistically significant factors between the 2 groups were gender, age, BMI and fluids administered intraoperatively, measured as ml/h/kg. The kind of operation performed was not important.

Conclusion: The patients with the highest risk of postoperative rhabdomyolysis were older, had higher BMI and had a lower fluid administration rate (ml/h/kg). This shows the importance of aggressive intraoperative hydration, even though fluid loss during laparoscopic operations is negligible.

	Rhabdomyolysis		p-value
	No	Yes	
Operation			0,302
TVGP	4 (50%)	4 (50%)	
SG	17 (31,5%)	37 (68,5%)	
Gender			0,025
Female	16 (44,4%)	20 (55,6%)	
Male	4 (16,7%)	20 (83,3%)	
Age	34 (4)	47 (10)	<0,001
BMI	46 (5)	54 (8)	<0,001
Diuresis (ml)	333 (189)	400 (194)	0,200
IV fluids ml/h/kg*	11,2 (1,2)	7,4 (2,6)	<0,001

IH.11 Cost of Obesity and Economic Value of Obesity Surgery for Turkey (CEVOS-T)

PRESENTER: M. Tatar¹

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Introduction: Obesity and its comorbidities are among the primary challenges that health systems face globally. Obesity is rapidly becoming a problem in Turkey as well. Recent research has revealed that 30.3% of the population is obese (20.5% of males, 41% of females) of which 2.9% of the obese population is classified under the morbid obese category. The 2003 Burden of Disease Study also concluded that 26,006 deaths for males and 31,136 deaths for females could be averted by decreasing the ratio of obese population.

Objective: The objective of this study is to find out the economic impact of obesity with its comorbidities, cost of surgical treatment of obesity and possible economic benefit of obesity surgery for Turkey.

Methodology: Literature search and expert panel are the main methodologies used in the study. A comprehensive literature search was undertaken with key words in PubMed to find out the extent of obesity and its comorbidities and treatment methods in Turkey. An expert panel questionnaire form was designed after the literature search aiming at finding the cost. The form was sent to the experts in advance and a panel discussion was undertaken to reach a consensus. After the consensus building phase the cost of obesity, cost of surgical treatment of obesity and economic benefit of obesity surgery were estimated based on the price tariff declared by the Social Security Institution.

Conclusion: The conclusions of the study will be revealed in the conference.

IH.12 Physicians Attitudes Towards Referring Diabetic and Obese Patients for Metabolic Surgery in Singapore

PRESENTER: H. Kaan¹

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Introduction: Metabolic surgery is increasingly being recommended as an option for obese Type II diabetics. However, little information exists about physicians perception of this especially in Asia.

Aim: Our aim was to investigate physicians knowledge, impressions and likelihood of recommending metabolic surgery to treat diabetic and obese patients.

Method: Physicians were identified from the list of registered physicians working in Singapore public hospitals and other databases. Endocrinologists (n = 60) and community-based physicians (n = 150) were sent a survey regarding their perceptions of metabolic surgery for diabetic and obese patients.

Results: In total, 62 physicians completed the survey, for a combined response rate of 29.5%. Majority of endocrinologists and community-based physicians had positive impressions towards metabolic surgery as a treatment option for obesity (95.2% and 92.7%, respectively). More endocrinologists (52.4%) in comparison to community-based physicians (24.4%) (p=0.046) would recommend metabolic surgery to treat obesity. For diabetes, majority of endocrinologists and community-based physicians had positive attitudes towards metabolic surgery as a treatment option (95.2% and 82.9%, respectively). However, both endocrinologists and community-based physicians were reluctant to refer their diabetic patients for metabolic surgery (33.3% and 14.6%, respectively).

Conclusions: Endocrinologists in Singapore are more likely to refer their obese patients for metabolic surgery than community-based physicians. For diabetes, both groups were reluctant to refer their patients for metabolic surgery as a treatment option. Future studies looking at reasons for reluctance to refer diabetic patients will be necessary to overcome this barrier.

IH.13 Changes in Bone Density After Bariatric Surgery

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Introduction: Obese patients have an increased bone density, probably due to their excess weight. After bariatric surgery excess body weight is drastically reduced in a short period of time. This might be accompanied with reduced bone density and may lead to complications. The objective of this study is to compare bone density between morbid obese patients undergoing laparoscopic Roux-en-Y gastric bypass (RYGB) and Laparoscopic Adjustable Gastric Banding (LAGB).

Method: In total 18 patients were included who underwent bariatric surgery (9 RYGB; 9 LAGB) in 2009. All patients underwent an extensive check-up, blood tests and Dual Energy X-ray Absorptiometry before surgery and 6, 12 and 36 months postoperative. Bone density was measured of the lumbar spine (L2-L4), both femoral necks and right distal radius.

Results: Bone density 12 months postoperative was increased at the lumbar spine with 1.16% and 3.43%, but decreased at the left and right femoral neck, and distal radius with 5.55%, 5.93% and 5.80% versus 1.49%, 2.36% and 1.87% after RYGB and LAGB, respectively. More detailed analysis and datacollection concerning 36 months postoperative are currently carried out. This will be presented on IFSO 2013.

Conclusions: Bone density decreases after bariatric surgery at both femoral necks, and right distal radius. A higher decrease is observed in patients who underwent RYGB compared to LAGB which is probably caused by a greater decrease in excess weight loss. Therefore, we need to be prepared of decreasing bone density after bariatric surgery and supplement deficiencies when needed to prevent complications.

IH.14 Changes in Sexual Functions in Patients Undergoing Laparoscopic Adjustable Gastric Banding

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Introduction: Sexual dysfunction is one of most common co-morbid diseases that accompany morbid obesity. In this study, we investigated the changes in sexual function after surgery for morbid obesity.

Methods: Of the 168 cases referred to the Department of General Surgery of Ankara Numune Training and Research Hospital due to morbid obesity and had laparoscopic adjustable gastric banding operation between September 2008 and December 2012; 48 cases who fulfilled the study criteria were included in the study. At the postoperative first year control of the cases, evaluations regarding co-morbid disorders, biochemical and hormonal tests, body weight and sexual function were compared with preoperative data. For the assessment of sexual function in women, the female sexual function scale (FSFI) and of erectile function in men, the international index of erectile function (IIEF) evaluation form were used.

Results: Compared to the preoperative period, co-morbid conditions decreased by 36.1 and 37.5%, in female and male patients, respectively. In male patients, of the sexual dysfunction assessment scales, IIEF score showed no erectile dysfunction (p=0.22). In female patients, a significant reverse association was observed between BMI and levels of HDL and progesterone (p=0.001). On the other hand, in male patients, a significant positive relationship was observed between BMI and levels of LDL, oestradiol and cortisol (p=0.007, p=0.039 and p=0.022, respectively).

Conclusions: We could not find any significant difference in sexual function in the early period after the LAGB operation; but long-term follow-up of the patients would be of significance in this regard.

IH.15 Road Running After Gastric Bypass for Morbid Obesity: Rationale and Preliminary Results of a New Protocol

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Introduction: In recent years, the pandemic explosion of obesity has led to the definition of a pre-eminent therapeutic role for bariatric surgery, confining physical activity to a success parameter of surgery rather than a primary prevention measure.

The aim of this study is to re-define a role for aerobic physical activity (road running) in strengthening the metabolic and psycho-social effects of bariatric surgery.

Methods: 10 patients who underwent gastric bypass (RYGB) for morbid obesity were submitted to an intensive program of road running training. After a preparatory trimester, a six-month intensive training program started, aimed at completing a 10 km competition in September 2013. Inclusion criteria included age (<50), BMI (<35), suitability for sport activity and good compliance. A cohort of 10 patients excluded for logistical issues were enrolled as a control group. During the training period patients were submitted to biometrical measurements, sport performance tests (Cooper), and cardio-pulmonary, metabolic, nutritional and psychiatric evaluations.

Results: Protocol compliance was 80%. After the preparatory phase mean weight significantly decreased (78.6 vs 86.8 kg, $p < 0.03$), slightly more than in the control group. Cooper test performance significantly increased for all the patients.

Glycemic values remained normal during the entire period. All the participants (100%) expressed satisfaction at participating in the program.

Conclusions: Road running seems to have an important supporting role in boosting bariatric surgery results. The utilization of monitorized and regulated training programs represents a fundamental prerequisite to achieving satisfactory results and adequate patient compliance.

IH.16 The Web-surfing Patient: The Role of Internet in the Decision Making Process in Bariatric Surgery

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Background: The increasing easy access to health related information on the Internet is hard to control, and e-information quality and accountability are difficult to assess. This study aimed to assess the role of the Internet in the decision-making process of obese patients.

Methods: One hundred obese patients seen between January 2012 and February 2012 were asked to fill a questionnaire evaluating their access to the Internet, the usefulness and trustworthiness of the Internet retrieved information, the verification of the information and the role of the information in the decision making process.

Results: Eighty-seven patients answered to the questionnaire. Of these, 92% had access to the Internet and 83% reported to have searched

about bariatric surgery. Their main interest was about the surgical techniques (88%), and the witnessed reporting in dedicated blogs (78%). Over 50% of the patients considered the e-information less valuable than the one received during the consultation by the bariatric surgeon. The accountability of the e-information was mainly evaluated by discussion with the general practitioner (82%) or familial members and friends (44%). One patient over three decided to undergo bariatric surgery mainly based on e-information, while discussion about treatment options with the doctor and the hospital reputation were taken into account in 75% and 64% of cases, respectively.

Discussion: E-information seems to have an important role in the decision making process of patients candidate for bariatric surgery. Health professional should create or promote high-quality health websites and integrate them in the relationship with patients.

IH.17 The Alteration of Eating Behaviors in Relation to Weight Loss – A Web-based Study

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Introduction: Modification and sustainability of eating behaviors among obese varies, and have been widely discussed due to long-term incompliance. Thus, we have evaluated the effects of web-based health counseling targeting eating behaviors in relation to weight loss, using the Three-Factor-Eating-Questionnaire-Revised-18-items (TFEQ-R18).

Methods: A total of 22.800 (mean age: 39.8 yrs females, 43.2 yrs males, BMI: 29 kg/m² females, 30.8 kg/m² males, sex: 80% females) members of a web-based weight loss program completed a questionnaire on sociodemographics, health aspects, and TFEQ-R18 (at baseline, 3-months, and 6-months). Members were categorized as completers (active participation 6 months) and non-completers (participation <6 months). The relationships between eating behaviors (uncontrolled eating, emotional eating, and cognitive restrained eating) and total weight loss were examined.

Results: The completers' (n=620) averaged weight loss was 7.0% for males, 5.8% for females. Completers decreased their uncontrolled eating from 56.3 to 32.0 ($p < 0.001$) and increased cognitive restrained eating from 50.6 to 62.9 ($p < 0.0001$). Males decreased their emotional eating from 57.2 to 35.9 ($p < 0.0001$). Conversely, females had a constant emotional eating score of 45.1 ($p = 0.976$). Baseline cognitive restrained eating score was associated with weight loss among completers ($p = 0.020$, $p = 0.002$, respectively). Males who decreased their emotional eating score achieved the greatest weight loss (11.1% \pm 5.4%, $p = 0.037$), whereas females who increased their cognitive restrained eating had the greatest weight loss (9.2% \pm 5.3%, $p = 0.024$).

Conclusion: The web provides promising results in altering eating behaviors to encourage weight loss. Dietary plans should incorporate differences in sex according to eating behaviors.

IH.18 The Safety and Efficacy of Bariatric Surgery for Obese Wheelchair-bound Patients

PRESENTER: G. Williams¹

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Aim: To evaluate outcomes of bariatric surgery performed primarily to improve mobility in patients with severe mobility limitations.

Methods: Patients with severe mobility impairment (wheelchair-bound) who underwent laparoscopic roux-en-Y gastric bypass (LRYGB) or laparoscopic adjustable gastric band (LAGB) surgery to improve their mobility were included. Patients were identified between July 2009–October 2011 using an electronic prospective bariatric database. Mobility was assessed by questionnaire during clinic follow-up, and analysed using SPSS.

Results: Fifteen patients (F=11, M=4) with mean age 48 (26–71) and mean BMI 46 (33–54) were included. Seven (47%) patients underwent LAGB and eight (53%) LRYGB. The aetiologies of mobility impairment included advanced osteoarthritis (n=6), spinal conditions (n=4), traumatic paraplegia (n=1), severe bilateral leg oedema and ulceration (n=2) and advanced rheumatoid arthritis (n=2). Mean length of stay was 3.8 days. There was no mortality.

One patient was lost to follow-up. Of the remaining 14 patients, the mean %excess weight loss (%EWL) at mean 18.5 months post-operatively was 48%. (68%EWL for LRYGB 20 months, 28.5% for LAGB 17 months). Ten patients reported improved mobility; most commonly reduced pain, improved independence and ability to transfer. Four patients reported no improvement in mobility (three LAGB, one LRYGB).

Conclusion: Bariatric surgery can safely improve mobility and quality of life in obese patients with severe mobility impairment. Such impairment should be considered an indication for bariatric surgery in select patients. LRYGB demonstrated better weight loss and mobility improvement compared with LAGB. Larger studies are required to establish robust selection criteria for surgery in this group.

IH.19 Self-efficacy in Weight Management, Patient Satisfaction and Lifestyle Habits After a Standard Gastric Bypass Procedure Up To 5 Years Later

PRESENTER: A. Katsarou¹

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Aim: To evaluate self-efficacy in weight management and lifestyle habits in patients undergone a standard gastric bypass procedure.

Methods: During 2006–2011, 114 patients were recruited to undergo a gastric bypass procedure. From them, 92 (80%) complied with follow up visits. During follow up patients answered questions regarding their dietary habits and eating behavior, physical activity and their general satisfaction from the surgery. Self efficacy in managing weight in the long run was evaluated with a 5-point Likert scale (0: no self - confident and 5: completely confident)

Results: The mean age of participants was 53±4.7 years old and 81% were postmenopausal women. Initial BMI was 44.7± 6.7 and mean BMI after at least one year later was 28.6±6.3kg/m². 32% declared that they have moderately improved their dietary habits and 38% had increased their physical activity (i.e. 1h walking daily). Although we managed to keep in touch with 80% of the patients, the majority of them (74%) did not follow the medical and dietary instructions Regarding self-efficacy 58% of patients rated themselves to 3 (moderately confident), 19% rated themselves to 4 (very confident) and 7% to 5. This self-rated score was positively associated with the number of follow-up visits and negatively with years after surgery. Nearly all patients (96.8%) declared that they would re-undergo the surgery if time went back and 57% declared that their life changed favorably in general.

Conclusion: Patients that decide to undergo a gastric bypass procedure remain satisfied with their choice. Nevertheless, they admit that they shall improve their weight management skills and efficacy. Dietary and physical activity habits do not seem to change favorably as well. To further improve life-long weight control, the importance of prospective monitoring and counseling by the bariatric team should be emphasized.

IH.20 Nursing Fellow Ups After Bariatric Surgery

PRESENTER: D. Darakjian¹

¹American Sports Medicine Academy, Head of dept, Dubai-United Arab Emirates

EBMR reported in The Journal of Endocrinology proved that the only known method for reversing Type 2 Diabetes was to increase the patients' MUSCLE MASS through strength training exercise! DFC/FIISM has specific treatments and Protocols to safely and effectively increase muscle mass in your patients' without the devastating consequences of current drug protocols.

EBMR reported in the Journal of Psychiatric Medicine proved that Exercise and Nutrition Prescriptions were more effective at treating many Mental and Psychological Disorders than current drug Protocols!

EBMR for Bariatric Surgeons proved that utilizing DFC/FIISM Protocols greatly improved the outcomes of Bariatric Surgery, including overall improvements in the patients' health, sustained fat loss and increased muscle mass.

EBMR for all cause mortality proved that the 4-METER STRIDE RATE TEST was the most accurate predictor of patients longevity, showing the highest scorers had over 300% greater longevity than the lowest scorers! DFC/FIISM Protocols can be safely and effectively used to greatly improve "STRIDE RATE" and corresponding longevity!

The lesson learned from all the new EBMR is simply that ALL chronic disorders stem from the degeneration of all the bodies physiological systems due to poor nutrition and lifestyle habits and lack of exercise. Logically, reversing this process will return the patient to full health! We all know the body has basic physiological needs that no drug Protocol will ever replace: air, water, food, shelter from the environment, protection from Toxic substances and EXERCISE! DFC/FIISM Protocols combine the Best Practices of Integrated Medicine, Sports Medicine, Regenerative Medicine, Nutritional Medicine and Age Management Medicine. These Protocols are all designed to provide all doctors an expanded SCOPE OF PRACTICE to improve their standard of care for all their patients regardless of their specialty! These Protocols are designed to work synergistically with their existing protocols that halt the progression of disease and provide relief from the discomfort of the patients' symptoms, but DFC/FIISM Protocols will quickly begin to regenerate the physiological system, allowing your patients to return to full health, vitality and recovery.

The chronic disease state typically progresses from becoming overweight, to obese, to Metabolic Syndrome, to Type 2 Diabetes resulting in the other various chronic disorders leading to premature death. DFC/FIISM Protocols enable doctors to reverse this progression!

EBMR shows:

* Osteoporosis results from the patients' lack of weight bearing exercise causing the loss of bone mass. DFC/FIISM Protocols regenerate bone mass at any age!

* CVD results from the patients' lack of CV exercise causing the degeneration of CV and CR function. DFC/FIISM Protocols regenerate the CV/CR systems

* Orthopaedic disorders result from the patients degenerating musculo-skeletal systems causing imbalances: typically the agonist muscle group becoming hypertonic and the antagonist group becoming stretched and weak. DFC/FIISM Protocols regenerate and correct these imbalances.

* Bariatric Surgeons are likely to see patients presenting with multiple conditions that must be addressed before the most efficacious use of surgery. DFC/FIISM Protocols are designed to meet this need and reverse virtually all chronic disorders in virtually all patients including overweight, obesity, CAD, CPD, COPD, HBP, MANY CANCERS, Metabolic Syndrome, Immunological and Psychological disorders and many more!

We are far past time to stop treating symptoms of disease and to begin treating the root cause of disease. DFC/FIISM Protocols focus on the CAUSE! We invite ALL DOCTORS to join us in becoming true HEALERS and act in the best interest of all your patients!

IH.21 Temperament as Independent Predictor of Weight Loss Following Gastric Bypass for Morbid Obesity

PRESENTER: C. De Panfilis¹

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Introduction: This study evaluated the influence of temperament traits on the 1-year outcome of gastric by-pass surgery for morbid obesity, controlling for the potential confounding effect of psychiatric and personality disorders.

Methods: Forty-nine patients with morbid obesity (BMI=46.4±6.7) undergoing gastric by-pass completed a thorough psychiatric evaluation before surgery. BMI reduction 12 months after surgery was used as the outcome variable. The psychiatric assessment at intake included structured interviews and questionnaires investigating the presence and severity of comorbid Axis I and II disorders. Temperament was evaluated with the Temperament and Character Inventory (TCI). The association between baseline psychiatry variables and 1-year BMI reduction was first evaluated with univariate analyses and then with linear hierarchical regression **Results:** Greater BMI reduction at 12-month follow-up was associated with higher depression levels and with the presence of psychiatric disorder at baseline, as well as with increased scores on the TCI scales 'Persistence' and 'Harm Avoidance'. However, only Persistence scores uniquely predicted BMI reduction when controlling for the other covariates and baseline BMI ($R^2=.56$, $B=1.06$, $p.00$).

Conclusions: Temperament traits denoting the ability to regulate one's behavior in favor of long-term demands (persistence) predict successful outcome 1 year after gastric by-pass for morbid obesity. This data suggest the need to preoperatively assess and reinforce such capacity to persevere in one's goals in spite of immediate frustration, impulses or affects in order to maximize the chance of surgical success.

IH.22 Psychological Determinants of Adherence After Gastric Banding

PRESENTER: R. Nelissen¹

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Introduction: Weight loss after gastric banding can only be reached if patients adhere to a diet. Failure in losing weight is therefore often seen in gastric banding patients. The aim of this cross-sectional study was to identify psychological determinants that are associated with failure in weight loss due to excess calorie intake.

Method: Gastric banding patients that received treatment and follow-up care at the hospital were approached for participation in the present study. Patients received a questionnaire that was guided by the I Change Model and measured risk perception, attitude, social influences, self-efficacy, intention and the behavior of calorie intake.

Results: Fifty-five participants completed the questionnaire. Almost sixty-six percent (65.7%) of the respondents had a calorie intake of 1200 kcal/day. Respondents with a higher risk perception had a lower calorie intake (Cohens $d = 0.51$). In addition, there was a small effect seen (Cohens $d = 0.18$) between high social influence and higher calorie intake. Furthermore higher caloric intake showed a trend towards a lower self-efficacy (Cohens $d = 0.97$).

There was a positive correlation between self-efficacy and pros ($p=0.004$) and a negative correlation between self-efficacy en cons ($p=0.007$). Self-reported performance skills and intention were high but the objectified behavior of calorie intake contradicted the skills and intention.

Conclusion: Although intention is high in most gastric banding patients, it is not supported by actual calorie intake. Future studies should focus on risk perception, attitude, social influences and self-efficacy to achieve a satisfactory EWL in gastric banding patients.

IH.23 Investigating Eating Attitudes, General Health Habits and Psychosocial Functioning in Bariatric Patients

PRESENTER: W. Borislavsky¹

Co-authors: W. Artz², C. Silverman³, G. Boyle⁴

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Introduction: This six-month longitudinal study examined how the removal of the fundus in the stomach of Laparoscopic Sleeve gastrectomy (LSG) patients affects their postoperative eating behaviours, general health habits, weight loss and psychological functioning as compared with Laparoscopic Adjustable Gastric Banding (LAGB) patients who still have their stomach intact.

Method: A clinical sample comprised of 21 bariatric patients completed two self-report questionnaires: 1) the Over Eating Questionnaire, and 2) the Depression Anxiety and Stress Scale before and six months after their surgery. Paired sample t-tests using a Bonferroni correction was performed to evaluate pre- and post-operative changes on the study's variables for the whole surgical sample. MANOVAs were applied to evaluate pre- and post-operative differences between the two surgical groups (LSG vs LAGB).

Results: Our results did not reveal any significant differences between the two surgical groups from pre- to six months post-surgery on the study's parameters. Significant differences in mean scores were observed for the whole sample in weight loss, over-eating behaviours, cravings for foods, and expectations about weight loss. Significant differences were also observed (pre- to post-surgery) in body image, health behaviours, and social integration, as well as modest improvements in affective functioning.

Conclusion: These results suggest that either surgical procedure has efficacy to significantly reduce a patient's weight, improve health behaviours and reduce problematic eating behaviours six months after surgery. Despite the reported effects of ghrelin, no differences in eating behaviours and psychological functioning were observed between LAGB and LSG patients.

IH.24 Comparison of Two Neuromuscular Anesthetics Reversal in Obese Patients Undergoing Bariatric Surgery - A Prospective Study

PRESENTER: A. Raziel¹

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Introduction: Maintaining a patent airway and accurate defending reflexes from the upper airway are crucial in morbidly obese patients due to their sometimes borderline vital functions. As such, a complete recovery of neuromuscular function after general anesthesia is essential to avoid postoperative residual curarization (PORC) in the postoperative period, influencing respiratory function. After surgery, reversal agents such as Neostigmine are commonly administered to accelerate the recovery of neuromuscular function. Sugammadex is a modified cyclodextrin specifically developed for rapid reversal of a Rocuronium-induced

neuromuscular blockade. The aim of this study was to blindly compare these two drugs in bariatric surgery for morbidly obese individuals.

Methods: The study was a prospective, double arm study. Each arm included 20 morbid obese subjects that were scheduled for bariatric surgery. The subjects were randomly selected to receive Neostigmine or Sugammadex for reversal of neuromuscular blockage. At the end of surgery, Sugammadex or Neostigmine-Atropine was administered and time to achieve 90% of Train of Four was measured. Level of consciousness as well as respiratory function, nausea/vomiting, and general feeling were recorded before transfer to post anesthesia care unit (PACU), in the PACU and during hospitalization to monitor the effect of the drugs.

Results: No differences were seen between the two groups in their level of consciousness in the PACU, respiratory function, nausea/vomiting, and general feeling but it took less time from the induction of the reversal to the transfer to the PACU when Sugammadex was used.

Conclusion: Sugammadex facilitates reversal of neuromuscular blockage after bariatric surgery.

VIDEO SESSION

VS.01 Standardization of Roux-en-Y Gastric Bypass After Performing 2500 Procedures

PRESENTER: R. Souza da Silva¹

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Introduction: The only effective treatment for morbid obesity is bariatric surgery. Roux-en-Y Gastric Bypass (RYGB) is the chosen procedure for most cases. Along the learning curve of the surgeon whom performs this procedure, it may occur some variations of the technique to a standardized RYGB.

Objective: This video abstract intends to analyze which factors along the learning curve influenced the standardization of RYGB.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by the same surgeon of CITOM from 2001 to 2013.

Results: Initially RYGB was performed by laparotomy and, with increasing surgical experience; it became to be performed laparoscopically. Another factor that influenced the decision of surgical approach indicated in Brazil is the health insurance authorization. The contensor ring was used routinely in the first procedures; however, after the appearance of some complications associated with its use, the contensor ring technique was interrupted. Nowadays, it is used routinely a penrose drain placed near the gastrojejunal anastomosis in order to guide a possible fistula.

Conclusion: RYGB is a safe procedure performed by open and laparoscopic approach. The majority of cases are performed laparoscopically, based on better results to the patient, regarding postoperative recovery and less time in hospital; and only when denial of health insurance, it is realized by open surgery. Complications associated with the use of retainer ring led to its use routinely removed. Routine drainage of GJ anastomosis is defended, since this provides early identification of fistula, which causes high mortality impact.

VS.02 Should Hand-sutured Gastrojejunostomy be the Gold Standard ? 1843 Cases of Primary Laparoscopic Gastric Bypass in a Training Program Without Leaks from the Gastrojejunostomy

PRESENTER: A. Chokechanachaisakul¹

Co-authors: J. Wannares¹, T. Cerabona¹, A. Maffei¹, A. Kaul¹

¹New York Medical College, Surgery, White Plains-United States

Aims of this video presentation are to describe our technique used in a serie of 1843 consecutive laparoscopic gastric bypasses done at a teaching center without any leaks from the gastro-jejunostomy and to highlight the fact that both teaching and good results in bariatric surgery can go hand in hand. Technique was refined over 11-year period from January 2001 till December 2012. Our technique in creation of the gastrojejunostomy is a four-layered hand-sutured gastrojejunostomy sized over an 18-French orogastric tube. We bring our Roux-limb up in a retro-colic retro-gastric transmesocolic route. The orogastric tube is removed after intraoperative testing of the anastomosis by injecting air through the tube while compressing the jejunum. Care is taken to ensure that there is no tension at the anastomosis, or narrowing at the transmesocolic or jejunojunction. All 1843 cases were attempted laparoscopically during this period. We converted 3 cases from laparoscopic to open approach (2 due to extensive adhesions and one due to lack of working space). Body Mass Index (BMI) of patients ranged from 35 to 90 kg/m² (average BMI 47.9 kg/m² and age from 16 to 75 years (mean 41.2 years). Average length of stay was 2.7 days. 30-day readmission rate was 6.9% while 90-day readmission rate was 9.3%.

Our video will show our technique with special emphasis to show tips and tricks to decrease complications. Though technically challenging, hand sutured gastrojejunostomy seems to have excellent results and is a technique which can be learned by fellows during training under close supervision.

VS.03 Gastrojejunal Calibrated Anastomosis in Laparoscopic Roux- en-Y Gastric Bypass: Do We Really Need the Ring to Get the 12mm Diameter ?

PRESENTER: N. Kawahara¹

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Introduction: The diameter of the gastrojejunal anastomosis is important during alimentary restriction which should lead to weight loss. Surgeons who perform RYGB with ring acknowledge its importance and usually say that the ring would guarantee a 12mm anastomosis because of the idea that the anastomosis would enlarge.

Numerous variations of the laparoscopic Roux-en-Y gastric bypass (RYGB) have been performed, including placing a ring proximal to the gastric outlet, in order to enhance the restrictive component to achieve better weight loss (silastic ring RYGB), minimizing complications such as dumping syndrome. On the other hand, a gastrojejunal calibrated anastomosis (GJCA) could reach the same result without the complications associated with the foreign body silastic ring.

Method: We created a rigid inspection protocol to standardize the GJCA performed during RYGB.

Morbidly obese patients were submitted to laparoscopic RYGB prospectively by a single surgeon. The gastric pouch was performed with linear stapler and the Roux Limb was created end-side with the GJCA hand-sewn performed. The staples belonging to the end of the staplerline were taken out together with a 15mm incision by an ultracision harmonic scalpel LCS-C5 (Ethicon Endo-surgery, Cincinnati, OH)(C=2.PI.R). The diameter of the GJCA laparoscopically performed was compared postoperatively by endoscopy after 5 years of follow-up. **Results:** 220 patients were evaluated. 51% were grade III, 34,9% were grade II with comorbidities and 7,1% were superobese and 0,55% supersuperobese. 71,82% were females. Mean GJCA diameter was 11,75+1,23mm; Mean Pouch was 3,02+0,5mm. Both the diameters of the Pouch and GJCA were significant (p<0,05). Stenosis was present in 4%.

Conclusion: Neither hand-sewn GJCA nor the pouch created in a standardized RYGB dilate over time. Other reasons for postoperative weight regain besides pouch or GJCA anastomosis enlargement must be investigated.

VS.04 “Simplified” Gastric By-pass. A Safe and Effective Procedure During the Implantation of a New Bariatric Surgery Unit

PRESENTER: C. Moreno-Sanz¹

Co-authors: J. Muñoz de la Espada¹, A. Morandera-Rivas¹, C. Sedano-Vizcaino¹, J. Picazo-Yeste¹

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Health care demand in morbid obesity has forced the development of new Bariatric Surgery Units in our country. Given the level of development of the established programs and their results, new Units are forced to the development of the programs with very recognized techniques and high quality standards result.

We present our surgical technique of simplified gastric by-pass, which has allowed us to develop a program of treatment of morbid obesity with excellent results.

The fundamental basis of this technique is the creation of all the anastomosis in the supramesocolic space. The term "simplified" should not create a false expectation of simplicity. However, this technique enables the procedure for an effective and safe performance, by limiting the disadvantages of the learning curve.

VS.05 Single Incision Roux en Y Gastric Bypass: How to Combat Traction and Counter Traction Without the Need of an Additional Port?-Video Based Description

PRESENTER: P. Palanivelu¹

Co-authors: P. Chinnusamy¹, J. KV¹, R. S¹, P. R¹

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Background: Single Incision laparoscopic surgery emerged with a great enthusiasm and with the numbers of publications going down every year, there seems to be a fading enthusiasm in the acceptance of these procedures. One identifiable reason is the intrinsic technical difficulty, especially the aspect of traction and counter traction. Hence at many instances we end up compromising this essential principle of laparoscopic surgery hence by increasing the possibility of complications. This can be managed by certain technical innovations hence by the basic essential steps of laparoscopic surgery is not compromised.

Video: In this high definition video of single incision laparoscopic roux en Y gastric bypass we highlight certain steps that assist in the ergonomics of the surgery and also help to manage the loss of traction and counter traction. The steps of the procedure are as follows:

After everting the umbilicus a 3–5 cm curvilinear incision was placed at the lower border. Pneumoperitoneum was created using closed Veress needle technique. The skin and subcutaneous flap was raised superiorly without incising the umbilical pillar to create sufficient space for placement of three conventional trocars. One 10mm trocar placed inferiorly for the telescope and right hand 5mm working and left hand 12 mm working and for stapler insertion. The trocars were placed in a staggered configuration. This meant that the right and left hands of the surgeon were in different vertical planes while working and the hand of the camera assistant was positioned more posteriorly to avoid contact with the surgeon. This helped to avoid instrument clashes outside the abdomen. The liver is retracted using the suspension tape technique using a small piece of a Ryles tube with two straight needles attached to either ends of the tube. After peritoneoscopy, the dissection of lesser curvature was started just proximal to the second branch of the left gastric vessel. Traction of the omentum can be done with the left hand and the countertraction will be provided using a stitch onto the lesser curvature and retracting it from outside. A similar approach can be adopted for retraction of the remnant stomach during the mobilization of the fundus and creation of the gastric pouch. Similarly, a stitch at the level of the jejunostomy can be used to assist closure of the mesenteric opening. Positioning of the trocars in a minitriangle format will assist in the suturing and the knotting process like conventional laparoscopy.

Additional 3mm trocar through the same incision can be placed whenever necessary.

VS.06 Closure of the Mesenteric Defects with V-loc in Case of Internal Herniation After Roux-en-Y Gastric Bypass: Surgical Technique

PRESENTER: D. Van Der Fraenen¹

Co-authors: F. Goudsmedt¹, B. Dillemans¹

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Introduction: Internal herniation (IH) after Roux-en-Y gastric bypass (RYGB) occurs quite regularly. Surgical management, necessary in all cases, consists of full abdominal exploration, adhesiolysis, reduction of the IH and closure of the mesenteric defects. In most cases this can be performed laparoscopically.

Method: In this video-presentation a stepwise technique is shown to laparoscopically handle IH after RYGB, as it is performed in our high-volume bariatric center.

Results: A typical case of IH through Petersen's space is presented. Intraoperatively, patient's position has to be adjusted at two well-defined moments. Initially the beach-chair position is utilized to optimally expose the possible hernia sites. Whenever IH is identified, patient is switched to Trendelenburg-position to identify the ileocaecal valve. In order to achieve full de-herniation, the small bowel is ran down gradually from distal to proximal until the entero-enterostomy is reached, with the surgeon standing on the left-hand side. When de-herniation is complete, patient is repositioned to the beach-chair position. Closure of the two defects is performed by a running suture with a non-resorbable unidirectional barbed suture (V-loc, Covidien). For optimal closure of Petersen's defect the surgeon is positioned in between the legs; for the defect at the enteroenterostomy we shift position to the right-hand side. This technique allows the surgeon to work ergonomically with a full range of mobility.

Conclusion: IH after RYGB can be handled laparoscopically in most cases using a standardized approach. This procedure requires some essential position-shifts from patient and surgeon, but provides a relatively accessible operation for any general surgeon.

VS.07 Pitfalls in Primary Closure of Mesenteric Defects by Endohernia Stapler

PRESENTER: E. Aghajani¹

Co-authors: H. Jacobsen¹, B. Nergaard¹, S. Fredriksen¹, B. Leifson¹, H. Gislason¹

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Internal hernia has been the most common cause of small bowel obstruction after Laparoscopic Roux-en-Y bypass (LRYGBP).

Increasing evidence supports primary closure, but there is no clear consensus in literature of how the mesentery should be closed. We describe our method, which has already gained wide popularity in Scandinavia. This video will demonstrate how to avoid the pitfalls, for example kinking of the enteroanastomosis (EA).

- Video starts with last suture of gastrojejunostomy (GE).
- Generous division of mesentery, dividing the marginal vessels also Necessary to reach down to the edge of transverse colon
- Stapling and suturing the EA
- Dividing the bowel between GE and EA
- Testing the GE with dyed saline via the 32F tube
- The EA is lifted to expose the bottom of the EA-mesenteric defect

- Endo universal staples (1.5 loads) applied up to the bowel and make Sure that EA is “floppy”
- After exposing the Petersen space, starting from the bottom and Stapling with 1.5 loads up to the transverse colon
- At the end, demonstrating the stability of the staples

VS.08 Laparoscopy-Assisted Transgastric ERCP After Roux-en-Y Gastric Bypass

PRESENTER: E. Facchiano¹

Co-authors: G. Liscia¹, G. Quartararo¹, S. Scaringi¹, R. Naspetti², M. Lucchese¹

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Introduction: The endoscopic access to the biliary tract represents a possible drawback of laparoscopic Roux-en-Y gastric bypass

Method: We present a video of a combined laparoscopic and endoscopic approach to perform ERCP. Once the pneumoperitoneum is obtained, a gastrotomy is created to introduce a 15 mm bladeless trocar into the stomach. The gastric wall is then pulled up and secured to the anterior abdominal wall by two trans-parietal stitches. A lateral-viewing endoscope is then passed through the gastrotomy and advanced to the papilla. Once the cystic duct is dissected laparoscopically, a flexible guidewire is introduced through a cysticotomy and advanced in the biliary tract through the papilla to the duodenum. The guidewire is then used by the endoscopist to enter the papilla, realizing a sphincterotomy and performing the ERCP under fluoroscopy. In the case described, no microlithiasis of the main biliary duct was found and a simple sphincterotomy to treat a probable primary sphincter dysfunction was performed. The endoscope is then removed and the gastrotomy is sutured using absorbable interrupted sutures in one layer. The cholecystectomy completes the procedure.

Results: The whole operative time was 170 minutes, no intraoperative complications occurred.

Conclusion: Laparoscopy-assisted transgastric ERCP is a safe and reproducible technique to access the biliary tract after Roux-en-Y Gastric Bypass.

VS.09 One Anastomosis Gastric Bypass (OAGBP) Reversal – A Very Safe and Easy Procedure

PRESENTER: R. Ribeiro¹

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Introduction: Bariatric surgery is nowadays a very popular type of surgery that achieves weight loss and improved quality of life to the patients. However, some of them are not enough satisfied with their long-term outcomes. Some of these patients will opt for a procedure reversal. The reasons for doing a reversal vary a lot and common reasons are complications, metabolic consequences, weight loss failure or psychological reasons. In an opposite way facing other procedures “One anastomosis gastric bypass” (OAGBP), our current main technique, has the very important advantage of being adjustable and completely reversible. Furthermore it’s a simple, quick and very safe operation one can use in case of life threatening complications or patient self option.

Method: Having an experience of about 700 Roux en Y Gastric Bypasses since 2003, we reviewed our database. We performed, in the last two years, about 254 OAGBP.

Results: Between them we had only one case of reversal in a woman who had got a BMI 25, without any metabolic or nutritional disturbance. Although the good medical condition, the patient asked us to reverse the procedure upon emotional intolerance because marital reasons. We asked for psychological support but the patient refused it. We performed it by laparoscopic approach. Here we show the used technique. The pos-operative period was uneventful.

Conclusion: The OAGBP is a reversible and easy operation allowing a prompt solution in rare patients otherwise difficult to deal with if “restitution ad integrum” is requested.

VS.10 Laparoscopic Revisional Duodenal Switch Post Mini Gastric Bypass in a Case of Liver and Kidney Transplant

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Introduction: Obesity is emerging as one of the most common causes leading to non alcoholic fatty liver disease (NAFLD). 3% of all NAFLD patients progress to liver failure and require transplant. Obese patients not only carry a high risk for transplant but are susceptible to recurrence of liver disease and metabolic syndrome even after transplant. Weight management in obese patients with liver failure remains a challenge.

Methods: Here we describe the case of a patient who underwent a concomitant dual liver and kidney transplant followed by a laparoscopic minigastric bypass. Subsequently mini gastric bypass was converted to a laparoscopic duodenal switch. The video depicts the technical considerations for a surgery of this nature.

Result: After mini gastric bypass this patient lost only 6 kg over 1 year, he was off all antidiabetic medications and the mycophenolic acid and Tacrolimus troughs were stable. In view of inadequate weight loss and persistent risk of redeveloping NAFLD due to obesity it was decided to go in for a revision and convert it to a duodenal switch that would aid in reaching the desired weight loss. Tacrolimus troughs were titrated on a daily basis after the surgery and were found to be stable.

Conclusion: The question about which is the best revisional procedure after transplant still remains unanswered and must be judged as per the case and expertise available.

This is the first reported case of revisional bariatric surgery after dual liver and kidney transplant.

VS.11 Laparoscopic Sleeve Gastrectomy with Duodenal Jejunal Bypass for the Patient with Situs Inversus Totalis

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Situs inversus totalis is a congenital condition in which the major visceral organs are reversed or mirrored from their normal positions. The prevalence of situs inversus varies among different populations but is less than 1 in 10,000 people. Laparoscopic surgery in a patient with Situs Inversus totalis may pose interesting challenges to the surgeon. Here we report a case of a morbidly obese female with situs inversus totalis suffering from severe diabetes who underwent Laparoscopic Sleeve Gastrectomy with Duodenal Jejunal Bypass (LSG/DJB).

We used 6 trocars including trocar for liver retractor. Surgeon stood on the right side of the patient. Sleeve gastrectomy was performed with usual fashion and transection of the duodenum was done. Jejunojejunostomy with BP limb of 100cm, AT limb of 150cm were made and duodenojejunostomy was performed with two layers hand sewn method. All mesenteric defects were closed and endoscopic leak test was done. Surgery could be performed without any trouble and within almost same duration as usual operations.

Postoperative course was uneventful and her severe diabetes and other comorbidities could get remission.

Bariatric surgery, especially which need to use anastomosis technique, is challenging for the patient with situs inversus totalis. Experienced surgical team can perform it safely without any complications. Important things is to know the anatomy well and do "Image training" carefully before the operation.

VS.12 Gastric Cancer in a Sleeved Stomach: First Case Report

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Introduction: Sleeve gastrectomy was pioneered as a two-stage intervention for super and super-super obesity to minimize morbidity and mortality. It has been employed increasingly, since 2006, as a stand-alone procedure for the treatment of morbid obesity and related diseases. It is not possible to quantify the incidence of esophago-gastric cancer after bariatric surgery, due to the paucity of reported data, and the main concern is the delay in diagnosis and management.

Case report: To date and to our knowledge, this is the first report of gastric cancer in a patient previously submitted to laparoscopic sleeve gastrectomy. The patient underwent this bariatric procedure in 2008 (Body Mass Index [BMI] = 61kg/m²). She experienced a good result in term of weight loss and presented at the time of operation a BMI of 34 kg/m². After four years, she complained about dysphagia and epigastric pain. An upper gastrointestinal barium swallow and a first gastroscopy did not reveal any pathological findings. A second endoscopy performed four months later revealed a signet-ring cell adenocarcinoma of the body of the stomach. After adhesions takedown, we opened gastrocolic ligament to remove greater curvature gastroepiploic vessels and lymphatic chains. Duodenum was transected with linear stapler and duodenal stump was oversewn. The esophagus was encircled and divided using linear stapler. D2 lymphadenectomy and prophylactic cholecystectomy were then performed. Retrocolic Roux-en-Y circularly-stapled end-to-side esophagojejunostomy was constructed using transorally inserted anvil (OrVil, Covidien, New Haven, CT). A methylene blue dye test showed no intraoperative leaks. All mesenteric defects were closed using non-absorbable sutures. The patient had an uneventful postoperative course, was discharged on POD 4 and has a six-month disease-free survival.

VS.13 Experimental Surgery Resulting in a Devastating Complication: Gastrogastric Herniation After Greater Curvature Plication. A Case Presentation

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Introduction: Laparoscopic greater curvature gastric plication (LGCP) is an emerging bariatric intervention. At the moment it is generally still considered as an experimental procedure. In this purely restrictive operation, invagination of a loosened greater curvature is performed to reduce the gastric capacity. In literature, limited evidence is found on long-term results and complications. Moreover, there is still no consensus on several surgical key-elements.

Method: Using a video presentation, we show a severe complication after LGCP in a 23-year-old woman, who is 22 weeks pregnant at time of first symptoms.

Results: Our patient underwent LGCP for morbid obesity at another institution. One month later, she unexpectedly got pregnant. Six months postoperatively, she presented with severe dysphagia and vomiting rendering all oral intake impossible. Upper GI series showed gastric outlet obstruction. Endoscopy revealed a total gastric outlet obstruction cause by a torsion of the stomach. In an urgent laparoscopic exploration we noticed a herniation of the distal stomach that protruded through the imbrication stitches. At first, a full deherniation was performed. Because of the severe symptoms and the pregnancy, we decided to fully undo the plication procedure. Patient had an immediate relief of symptoms and was discharged 4 days later.

Conclusion: LGCP is a novel bariatric procedure with a rising popularity in some countries. Several reports of complications have been made. At the moment, LGCP should be reserved for clinical trials, in order to assess the reliability and efficacy of such new procedure.

VS.14 Transgastric Laparoendoscopic Reversal of Vertical Stapled Gastroplasty

PRESENTER: A. Aly¹

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Aim: We present a novel, minimally invasive and time saving approach to the reversal of vertical stapled gastroplasty.

Background: Common late term problems of stapled gastroplasties include stomal stenosis, pouch dilation and staple line defects causing significant reflux or food intolerance. Surgical reversal requires removal of the retaining sutures / band at the stoma. An alternative is division of the stoma using a linear cutting stapler. Such surgery may be prolonged and difficult due to adhesions from the previous surgery. If the patient desires a revision bariatric procedure (e.g. gastric bypass) then such adhesiolysis is simply part of the procedure and cannot be avoided.

However if only reversal is desired to relieve symptoms, it would be beneficial to do so without prolonged and difficult dissection.

We report our early experience of successful reversal using a single incision "transgastric" endoscopic approach and present a video of the procedure. We believe this technique has not been reported previously.

Method: A gastroscope is used to insufflate the stomach. After confirmation of transillumination, a single 10-15mm incision is used to cut down onto the greater curve of the stomach, distal to the stoma. A 12mm laparoscopic port with retaining balloon is placed into the lumen of the stomach. An endostapler is then introduced via the port into the lumen of the stomach under gastroscopic vision and guided across the stoma for division.

Results: Ten cases were performed uneventfully with excellent results and a mean operating time of 23 minutes confirming simplicity, applicability and safety.

VS.15 Vertical Gastrectomy with Jejunio-ileal By-pass Technical Steps

PRESENTER: J. Abbud Ferreira¹

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Introduction: During the last decade, many methods to perform bariatric surgery have appeared, searching for the best way to reduce weigh with less or none collateral effects.

Methods: At our service, in Sao Paulo, Brazil, we developed an association of the vertical gastrectomy with a by-pass jejunio-ileal, in order to have both restrictive and disabsorptive factors. This video intent to show the steps of our technique.

Results: We've operated 65 patients under the described technique and made this video showing the main points to perform the surgery. At first we perform a vertical

gastroectomy from 3–5cm of the pylorus to de Hiss angle. Then, we measure 50cm from ligament of Treitz and staple with the ileum 120cm from the ileocecal valve.
Conclusion: We observed that all the patients had a significant loss of weight after the operation that remained after years, proving the efficacy of the method.

VS.16 Eroded Adjustable Gastric Band: Endoscopic Removal

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Introduction: Adjustable gastric banding is frequently adopted to treat morbid obesity. Band erosion into the gastric lumen is one of the complications, occurring in 1 to 11% of cases. Although surgical treatment is possible, endoscopic removal has been described as a safe and a minimally invasive alternative.

Methods: 38 year old male, band implanted for 4 years with good results, presented with an abscess on the port site that was removed. Upper endoscopy showed intragastric erosion of 20% of band circumference, primary physician chose to wait until 50% migration to refer for endoscopic treatment. Procedure performed under general anesthesia in an outpatient center, using a standard gastroscope and gastric band cutter. Initially, upper-endoscopy is performed, as the scope is passed in-between the band and gastric wall. A soft 0.35 guidewire is left into the duodenum; the endoscope is removed and reintroduced retracting the wire back, creating a mouth-band-mouth loop. A metallic sheath slides over the loop until it reaches the band. Twisting the handpiece of the device, the band is cut by strangulation and pulled intragastrically using a grasper. The band was then removed through the mouth with a polypectomy snare. Second-look was performed to check for bleeding and perforation signs.

Results: Patient was discharged uneventfully after recovering from anesthesia. On follow-up, there is weight regain and a RYGB is scheduled to be done.

Conclusion: Endoscopic removal of LAGB can be done in an outpatient basis safely and should be considered as one of the main options for this situation.

VS.17 Laparoscopic Removal of Retained Gastric Band –Caplin's Procedure

PRESENTER: D. Hanratty¹

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Introduction: Complication rates following laparoscopic adjustable gastric banding are approaching 50%. Erosion is one of a number of recognised complications. Methods of removing eroded bands include endoscopic retrieval or formal laparoscopy and removal of the band at the proximal stomach should endoscopic removal prove unsuccessful. A major disadvantage of laparoscopic removal directly on to the band is encountering dense fibrotic tissue and inadvertent injury to the stomach. We describe a novel technique of laparoscopic distal gastrotomy and removal, therefore avoiding fibrotic tissue. This technique has proved its worth for many years in our unit hence, Caplin's Procedure.

Method: We use three ports (1x5mm, 2x10/12mm). The distal stomach is fixed to the anterior abdominal wall by two stay sutures of 2–0 prolene. A longitudinal distal gastrotomy is performed using a Harmonic Ace. The laparoscope is introduced into the open stomach and the eroded band grasped. The gastric band tubing is divided after incising the skin over the subcutaneous port. The gastric band is then retrieved via the

gastrotomy and removed via the left 10mm port. The gastrotomy is closed in a hand sewn continuous fashion.

Conclusion: This technique provides an alternative to more recognised methods of eroded band removal and should be considered as the next step after failed endoscopic retrieval.

VS.18 Laparoscopic Adjustable Gastric Band as a Salvage Procedure for Failure of Roux-en-Y Gastric Bypass

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Introduction: Some patients fail to achieve successful long-term weight loss after Roux-en-Y gastric bypass (RYGB). Mostly there is a gradual loss of restriction without any anatomical explanation such as pouch or gastroenterostomy dilatation. Therefore, adding an additional restrictive measure seems to be the most logical intervention.

Method: The surgical key-elements of adding a laparoscopic adjustable gastric band around the gastric pouch after RYGB are shown in a video presentation and discussed in detail.

Results: After adhesiolysis between stomach and liver, and at the staple lines between pouch and remnant stomach, a retrogastric tunnel is created using the pars flaccida technique. Subsequently, the band and tubing are introduced and pulled through the retrogastric tunnel. When closing the band a small pouch is maintained above the band. Additionally, 3 fixation sutures (non-absorbable) between pouch and gastric remnant are placed above and below the band. Hereby, the chances of slippage or angulation are minimized. In a final evaluation, a large bore gastric tube is passed through the band to appreciate the position and the restrictive effect.

Conclusion: This video presentation shows the technical aspects of placing a gastric adjustable band as a salvage procedure after failed gastric bypass. The procedure is relatively easy to perform for experienced laparoscopic surgeons. It is an adequate intervention to induce further weight loss keeping in mind the low morbidity for the patient.

VS.19 Conversion Surgery: Gastric Band to Gastric Sleeve

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Introduction: 45-year-old patient who in 2005 had Gastric Band surgery due to morbid obesity (BMI 46) and reached BMI 30 in the 3rd year postoperative. In January 2011 the patient presented gastric band slippage and it was removed. In June 2011 with BMI 40 it was programmed a conversion surgery to Gastric Sleeve.

Contents Description: Gastric Band extraction: 4 trocars were placed, perigastric and gastrohepatic adhesions removed by using unipolar and harmonic scalpels to liberate anterior gastric portion. Tubulature sectioned and band extracted through 10-mm trocar. Hemostasis control.

Gastric Sleeve Conversion: 5 trocars were placed, gastrohepatic adhesions removed with harmonic scalpel. Round ligament sectioned and lesser curvature meticulously dissected. Short vessels sectioned to liberate angle of His. Pylorus location 4cm distance marked as inferior limit to gastric section. Posterior gastric portion liberated. A 32-Fr tube was placed. Gastric section: 4 60-mm Echelon cartridges were used for mechanical suture. Reinforcement with continuous invaginating suture stitches PDS 3.0. Bed drainage. Stomach extraction. Access closure.

Observations And/Or Comments: Patient tolerated procedure. Clinical Discharge 48 hs postoperative.

VS.20 Bowel Migration of Gastric Banding with Acute Intestinal Obstruction

PRESENTER: A. Valenti¹

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Introduction: Laparoscopic gastric banding (LGB) has become the most popular restrictive procedure in Europe, because of its minimal invasivity, complete reversibility and a low morbidity and mortality rate. We report a rare and late complication of GB: acute bowel obstruction resulting from migration of gastric band occurring 8 years after its placement.

Case Report: A 40-year-old female presented at the emergency ward with cramping abdominal pain, constipation, nausea, and vomiting since 48 hours. There was no hematemesis, and she was afebrile. She had undergone laparoscopic gastric banding with the LAP-BAND adjustable gastric band, LAGB (Allergan, Irvine, Calif), 8 years previously in another hospital. At the time of the bariatric surgery, her body weight was 110 Kg with height 155 cm (body mass index [BMI] 45 kg/m²). On admission to our Hospital she weighted 70 kg with BMI 29 kg/m².

The abdominal X-ray showed an abnormal position of the band, lying in the lower abdomen and abdominal CT scan with water –soluble contrast confirmed intra-intestinal band dislocation, partial obstruction and dilatation of the small bowel with a little amount of free intrabdominal liquid. The patient was taken to the operating theatre and the timing of the intervention was to do in a first time a laparoscopic exploration, and in a second step the port was removed and a laparotomy was done, through the same incision, to removal the gastric banding by a jejunotomy.

Conclusion: Small bowel obstruction consequent to intragastric band migration is a rare complication after LAGB. When it occurs, abdominal surgical exploration and removal of the band is mandatory. In order to prevent weight regain, a delayed revisional bariatric procedure should be proposed to patients.

VS.21 Standardized Surgical Technique of Laparoscopic Adjustable Gastric Banded Plication

PRESENTER: C. Huang¹

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Introduction: Laparoscopic adjustable gastric banded plication (LAGBP), which combines adjustable gastric banding and plication, has been adopted by some bariatric surgeons to treat morbid obesity. However, non-standardized surgical steps provoked un-expectable complications. Here we postulate standardized surgical techniques, included preserving right gastroepiploic vessels and uniform plication volume.

Methods: We started dissection of the greater omentum using the Harmonic Scalpel, 3cm from the pylorus and 2cm from the greater curvature edge to preserve the right gastroepiploic vessels. Dissection was then continued up to the angle of His exposing the left crus of the diaphragm. We plicated the stomach based on individual patients stomach size with Gastric Plication Formula. Then plication was performed with interrupted 2–0 Ethibond sutures at intervals of 2cm and then was subsequently reinforced with continuous seromuscular suturing, using Polypropylene 2–0 suture.

Results: 52 patients received this procedure laparoscopically with mean operation time 105.8 mins. No intra-operative complications or surgical mortality was observed. No major surgical complication (0%) was observed, but only 2 patients were re-admitted for dehydration and medical treatment offered.

Conclusion: Standardized technique of LAGBP further ensures the feasibility, safety and reproducibility of this new bariatric surgery.

VS.22 Laparoscopic Revision of Modified Roux-en-Y Gastric Bypass with Weight-regain to Ileal Interposition with Diverted Sleeve Gastrectomy

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Introduction: Weight regain after RYGB is increasingly reported in the bariatric literature. Ileal Interposition with Diverted Sleeve Gastrectomy (II-DSG) is a new and safe option with prominent metabolic effect without any vitamin and mineral malabsorption.

Method: A 34 year old female with an open RYGB in 2009 admitted with weight regain. The surgery was performed as a single step laparoscopic operation. The gastrojejunal and jejunoileal anastomosis were taken down. The jejunojejunal and gastrogastroic anastomosis are performed by linear staplers and normal anatomy is restored. After a liberal sleeve gastrectomy, the duodenum is divided after pylorus but the right gastric and gastroepiploics are preserved. A 170 cm segment of terminal ileum, taken 30 cms proximal to I-C junction was prepared and ileo-ileal anastomosis done to re-establish the continuity. The duodenoileostomy was performed by hand-sown sutures in two layers. Then the ileojejunal anastomosis is performed by endoscopic linear stapler. Mesenteric gaps are closed by non-absorbable 3–0 polypropylene interrupted sutures.

Results: The operation duration was 11 hours. Patient had a leak from gastrogastroic anastomosis on the third day after the drain was removed. A prompt laparoscopic evaluation and repair was performed. She was discharged 1 week after 2nd surgery.

Conclusion: The II-DSG might be a safe and durable option for RYGB which needs revision with out forming any malabsorption.

VS.23 Case Presentation of Laparoscopic Sleeve Gastrectomy, Post Laparoscopic Gastric Plication, Post Laparoscopic Release of Plication Suture Line for Gastric Obstruction

PRESENTER: A. Salem¹

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This is a 41 years old female, with long standing history of obesity with osteoarthritis of both knees, irregular menses, left ovarian cysts, BMI of 40, failed conservative medical measures to reduce her body weight, underwent Laparoscopic gastric greater curvature plication on June 2011, that was carried out over 36 French orogastric tube, in 2 layers running fashion, inner 2.0 Polysorb and outer 2.0 Bralon. On the first postoperative day, her contrast swallow revealed no leak or obstruction to the contrast. Patient Presented to E/R on Sept. 2012, with one week history of epigastric and retro-sternal pain, Contrast swallow revealed large epigastric pouch with obstruction of the passage of contrast to distal stomach. Patient was taken to Operating room; laparoscopic release of gastric plication suture line was carried out to relieve the gastric obstruction. Patient regained all her lost body weight and more, for which patient was taken to operating room on March 2013, where laparoscopic sleeve gastrectomy with staple line invagination was carried out, operative and postoperative course went uncomplicated.

VS.24 Intra-gastric Balloon Migration Causing Intestinal Subocclusion

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Introduction: Intra-gastric balloons were first introduced in 1982, by Harboe and Nieben, as a temporary weight loss strategy. Balloons are used primarily in patients who do not meet criteria for bariatric surgery, or as adjuvant to preoperative weight loss in the super-obese. Despite being an endoscopic procedure with relative simple technique, it is not free from complications. Spontaneous deflation with intestinal migration is one of the most feared adverse events.

Methods: We present a case report of a female patient, age 36, BMI = 29 kg/m², who underwent implant of a fluid-filled intra-gastric balloon.

Results: After four months of regular follow-up, the patient did not return for next consults. Nine months after implantation of the device she developed abdominal pain, nausea, bloating, followed by diarrhea episodes. An ultrasound did not see the balloon, and computerized tomography showed thickening in the distal ileum and moderate distention of bowels. Surgical treatment was performed by combined laparoscopy and laparotomy, achieving successful removal of the prosthesis.

Conclusion: Intra-gastric balloon deflation may cause intestinal migration, leading to subocclusive syndrome in patients who remain more than the recommended time with the balloon. Surgical treatment is effective in removing the prosthesis in such cases.

VS.25 Gastric Perforation Secondary to Intra-gastric Balloon

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Introduction: The intra-gastric balloon is currently used as a less invasive option for the treatment of obesity and is indicated for patients who do not fulfill the criteria or do not wish to undertake bariatric surgery, and in preoperative weight loss in super-obese patients. Despite being minimally invasive, with placement and removal done endoscopically, the intra-gastric balloon has complications, such as gastric perforation, one of the most feared.

Method: We present the case of a female patient, BMI of 28.7 kg/m², who underwent placement of intra-gastric balloon (Silimed, RJ, Brazil).

Results: Her evolution was satisfactory, with loss of 14 Kg. After 6 months and 17 days, already scheduled for balloon removal, patient presented sudden and severe abdominal pain. An endoscopy was performed, which revealed an ulcerated lesion with gastric perforation in the anterior wall. The patient was treated by laparoscopy, through injury suture, having a satisfactory outcome.

Conclusion: Facing sudden severe abdominal pain in the presence of intra-gastric balloon, the possibility of gastric perforation should be considered. Endoscopy is the best diagnostic tool, providing direct visualization of the lesion. Treatment should be immediately performed, by a surgical approach.

VS.26 Minimally Invasive Treatment of a Duodenal Perforation After Endobarrier Implantation

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Background: According to the increasing incidence of overweight and the consequences like Type 2 Diabetes mellitus (T2DM) it's necessary to improve

the therapie of obesity. The EndoBarrier system is a Duodenal-jejunal Implant, anchored in the duodenum, that prevents food from contacting the intestinal wall. It is proposed to have the comparable effects as gastric bypass surgery. In this case report we describe the complication of a duodenal perforation after EndoBarrier implantation, and the minimally invasive treatment. In the literature there is, to our knowledge no description of a comparable case.

Case description: A 49 year old man with a BMI of 40.9 kg/m² (185cm, 140kg) and a poorly regulated T2DM (HbA1c 9,6%) received an EndoBarrier implant for improving the T2DM. After 4 weeks the Patient came in the emergency room with an acute abdomen. In the clinical examination the patient presented peritonism in the right epigastric region. Laboratory work up showed CRP of 280 mg/l and the CT scan showed free air in the abdomen suspicious for perforation in the duodenum. We decided to perform a combined endoscopic and laparoscopic treatment procedure in general anesthesia. As a first step the implant was removed endoscopically. In the laparoscopy, peritonitis of the right upper quadrant was seen. After dissection of adhesions the perforation was located at the duodenal bulb. The perforation was closed laparoscopically using a running suture and the abdominal cavity was rinsed and drained. Recovery from surgery and peritonitis was quickly. The patient was discharged from hospital 9 days after surgery with normal laboratory values.

Discussion: This case shows a serious complication of the EndoBarrier system which was exceptionally well treated by our interdisciplinary team of surgeons and endoscopists. We strongly propose a minimally invasive treatment like described in this case. Patients with diabetes and obesity are at high risk for complications after major abdominal operations, a minimally invasive treatment can reduce the risk for wound infections and allows early mobilisation. Furthermore will be preserve the possibility to perform laparoscopic metabolic surgery (gastric bypass) after complete recovery of the patient.

VS.27 Extra-luminal Complication Following Endo-luminal Surgery for Morbid Obesity - A Video Case Report

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Introduction: Obesity is a growing problem. Although laparoscopic bariatric operations are effective, they are associated with significant risks. Hence there is demand for safer and less invasive procedures. Primary Obesity Surgery Endolumenal (POSE) is a new, incision-less bariatric procedure. No serious procedure related complications have been reported yet. Post-op complications reported so far included nausea, vomiting, abdominal discomfort and rarely bleeding or perforation.

Method: We present the first case of a splenic abscess following POSE. A 49-year-old female underwent a POSE procedure and was discharged on the first post-operative day. She was readmitted next day with nausea, vomiting and upper abdominal pain, particularly on the left. Initial CT showed no perforation or evidence of obstruction. Her nausea persisted and she later became pyrexial, tachycardic and developed anaemia suggestive of sepsis. Blood cultures grew *Streptococcus milleri*. Echocardiogram was normal. Subsequent imaging showed two splenic infarcts, which later evolved into splenic abscesses associated with small left pleural effusion. She fully recovered following antibiotics for 3 weeks.

Results: We feel after reviewing the video of her surgery, that an injury to short gastric/ splenic vessels may have resulted in this splenic infarcts.

Conclusions: POSE procedure has been considered as an incision free safe bariatric procedure. There is however a small risk of injury to structures around the stomach during suture placement due to visual blinding. This may have led to development of splenic infarcts and pleural effusion. We propose that these should be recognised as associated risks and mentioned during consenting for POSE.

VS.28 Post-sleeve Gastrobronchial Fistula: Endoscopic Treatment**PRESENTER: M. Galvão Neto**¹Co-authors: A. Ramos¹, M. Galvão Ramos¹, E. Franca², L. Silva³, J. Campos²¹Gastro Obeso Center, Bariatric Endoscopy Department, São Paulo-Brazil²Federal University of Pernambuco - UFPE, Department of Surgery, Recife-Brazil³Hospital Agamenon Magalhães, Department of Surgery, Recife-Brazil

Introduction: Sleeve gastrectomy (SG) His angle leak tends to become chronic, in some cases demanding an alternative endoscopic approach. After sepsis treatment, stents are first line of endoscopic management on early leaks (up to 30 days). On late leaks or if stent fails, our option is pneumatic dilation associated with endoscopic septotomy, since usually there is a septum dividing the leak and gastric lumen. The sleeve leak outcome is even worse when it involves the pulmonary area. Here we describe the case of a gastrobronchial fistula after SG.

Methods: 32 year old female patient, BMI of 41 Kg/m², submitted to SG. Three weeks later, she presented sepsis and underwent laparoscopy identifying an abscess caused by a His angle fistula. Cleaning, suture and drainage were performed. Sepsis persisted and she was submitted to another laparoscopy and a further laparotomy with same approach. Finally, a gastro-pulmonary fistula (treated initially with chest tube and then with thoracotomy) and a gastrocutaneous fistula developed. By the time she was referred to our center she had around 60 days from the original procedures. Treatment consisted in 3 consecutive sessions of endoscopic gastric lumen pneumatic dilation (performed with an OTS 30–35 mm achalasia balloon under 15–25 psi) associated with septotomy done with endoscopic cautery.

Results: Patient outcomes were favorable as demonstrated by the X-ray at the end and she is asymptomatic in a 6 month follow-up.

Conclusions: SG leaks, even the worst ones, can be treated by therapeutic endoscopy like pneumatic dilation and septotomy.

VS.29 Laparoscopic Partial Esophagogastrectomy with Roux En-Y Esophagojejunostomy for the Treatment of Chronic Leak After Sleeve Gastrectomy**PRESENTER: N. Beglaibter**¹Co-authors: R. Rosenthal², R. Grinbaum³¹Hadassah Mount Scopus University Hospital, Surgery, Jerusalem-Israel²Cleveland Clinic, Bariatric Institute, Weston-United States³Scopus University Hospital, Surgery, Jerusalem-Israel

51 years old female, super morbid obese (BMI 56), diabetic, hypertensive women underwent an uneventful laparoscopic sleeve gastrectomy. Postoperative course was unremarkable with a normal UGI on POD1. One week post operatively she presented with a leak. At laparoscopy no visible leak was identified despite blue dye test and biological glue was sprayed and a drain placed. She continued to leak, an attempted endoscopic Uvesco clip failed, a combined endo – laparoscopic suture of the staple line break failed as well. She was treated conservatively with TPN and NPO initially and afterward enteral nutrition was resumed with a persistent chronic gastric fistula. 4 months later she was operated laparoscopically. We present a video of partial esophagogastrectomy including the fistula site and a Roux en-Y esophagojejunostomy reconstruction.UGI post operatively confirmed no leak with good passage. She had an uneventful course. Six months post operatively her BMI had decreased from 56 to 42 with resolution of all comorbidities. Proximal leaks after sleeve gastrectomy are rare but if persist and become chronic are difficult to manage. Treatment is controversial and ranges from stent placement to total gastrectomy. In this video we present an alternative laparoscopic treatment, giving a definite high quality solution and resolution of primary and secondary morbidities.

VS.30 Conversion of Sleeve Gastrectomy to a Laparoscopic Silastic Ring Vertical Gastric Bypass (SRVGBP)**PRESENTER: A. Salinas**¹Co-authors: W. Garcia¹, M. Ramirez¹¹Hospital De Clinicas Caracas, Bariatric Surgery, Caracas-Venezuela

Introduction: Poor weight loss in patients after sleeve gastrectomy has been related to enlarged gastric reservoirs and/or initial calibration over a 36F bougie. Conversion to gastric bypass is an excellent option for this population.

Methods: Our patient is a 39 year old female, initially weighing 102 kg. (BMI 40 kg/m²), who underwent an endoscopic vertical gastroplasty six years ago. This was converted to a laparoscopic sleeve gastrectomy three years later. She presented to us for further weight-loss options given her weight of 104 kg. We proceeded with conversion to a laparoscopic SRVGBP. After preparation of the Roux limb, we performed a vertical gastric pouch transecting the stomach parallel to the lesser curvature, 6 cms below the EG junction, over a 32F bougie, with resection of the remnant stomach. The roux limb was brought up antecolic and antegastric. We placed a 6 cm silastic ring above of the gastrojejunostomy, as we do routinely.

Results: There were no post-operative complications. On the 3th post-operative month, she had a 40% of EWL with no nutritional complications.

Conclusion: SRVGBP with gastric transection is a safe procedure, producing good long-term results. This type of revision should include a new gastric transection with proper size calibration in order to produce good weight loss results.

VS.31 Intraoperative Prevention of Stenosis During Laparoscopic Sleeve Gastrectomy**PRESENTER: R. Vilallonga**¹Co-authors: S. Van De Vrandre¹, J. Himpens¹¹ Az Sint Blasius, Obesity Department, Dendermonde-Belgium

Many different medical and surgical modalities have been described for the treatment of late strictures after Laparoscopic Sleeve gastrectomy (LSG). They include observation, endoscopic dilatations, seromyotomy (SM) and wedge resection of the sleeve stomach including the stricture. Strictures after LSG are preventable by appropriate surgical technique of the LSG: when stenosis is apparent preoperatively, SM or plasty of the stenosis may be performed at the time to prevent the development of a stricture.

VS.32 Situs Inversus and Laparoscopic Sleeve Gastrectomy – A Case Presentation**PRESENTER: V. Premaratne**¹Co-authors: N. Sanmugalingam¹, O. Khan¹, A. Bond¹, A. Wan¹¹St George's Healthcare NHS trust, Upper GI Surgery, London-United Kingdom

Introduction: Morbid obesity is emerging as an endemic problem with an increasing number of complex patients undergoing bariatric surgery. One such patient presented to our unit with a history of Bardet-Biedl; a congenital condition associated with intra-abdominal visceral malrotation. This has the potential to cause problems during surgical procedures, without prior preparation, due to unknown organ position and blood supply.

Methods: The radiological images and video presentation demonstrates the complexity of the anatomy in this case and its subsequent management.

Results: The displayed imaging was used to plan the intra-operative approach that was to be used. As shown the general steps for the procedure include; identifying anatomical structures, dissection of the hiatus, forming the gastric sleeve, leak test and specimen removal.

Conclusion: Patients with complex anatomy can still undergo bariatric surgery however a multidisciplinary approach is essential in order to effectively delineate the patient's anatomy and plan the surgery accordingly.

VS.33 Complications After RYGBP, Acute Abdomen: Causes of Bowel Obstruction

PRESENTER: G. Alvarez¹

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With the increasing frequency of laparoscopic Roux-en-Y gastric bypass (RYGB), we expect to be called upon more often to deal with the complications of this procedures. One of the most common presenting symptoms of a delayed postoperative complication of RYGB is epigastric, colicky abdominal pain. Bowel obstruction should always be considered in the differential diagnosis. Bowel obstruction is a known complication of Roux-en-Y gastric bypass. It can be caused by adhesions, internal hernia or intussusception and less frequently due to phytobezoars.

Methods: We present the radiologic laparoscopic treatment of presentation of a bowel obstruction by adhesions, internal hernia or intussusception and phytobezoars in patients after RYGB.

Results: A 39-year-old female presented 1 year after opening Roux-en-Y gastric bypass with colicky abdominal pain, vomiting and inability to pass flatus. She had lost 100% of her excess weight after surgery and her body mass index had dropped from 40 to 25 kg/m². The computer tomography showed target signal in sausage. At exploration, a retrograde intussusception of the small bowel was noted distally to the jejunojejunostomy causing obstruction of the alimentary and biliopancreatic limb and gastric remnant. The intussusception was irreducible with signs of bowel ischaemia and required excision. Second case, a 45-year-old male presented the same symptoms of bowel obstruction treated laparoscopic by adhesions. The third case, 32-year-old female presented 8 months after opening Roux-en-Y gastric present the same symptoms and undergone surgery by internal hernia. The last case, a 43-year-old female, though symptoms of bowel obstruction and undergone surgery by bezoar, one of the unusual underlying causes of bowel obstruction after bypass surgery; the phytobezoar (undigested fruit or vegetable fibers).

VS.34 Laparoscopic Resection of the Anastomotic Ulcer and Revision of Gastrojejunostomy After Roux-en-Y Gastric Bypass

PRESENTER: M. Jawad²

Co-authors: M. Goldbach¹, R. Moon², A. Teixeira²

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²Orlando Regional Medical Center, Department of Bariatric Surgery, Orlando-United States

Introduction: 41 year old female with history of gastric band placement (2006), conversion to Roux-en-Y gastric bypass (2007), and resection of anastomotic ulcer (2008), presented with 4 weeks of severe, intermittent LUQ pain.

Materials and Methods: Veress needle was inserted in the left upper quadrant. Abdomen was insufflated and trocars were inserted. The right lobe of the liver was retracted anteriorly. The pouch revealed very thick ulceration with adhesions and thickening/inflammation around gastrojejunostomy extending to the stomach remnant. The gastrojejunostomy was separated from the stomach remnant and the ulcer was separated. The pouch was dissected away from the distal stomach allowing transection of the ulcer on both sides. The jejunum was then transected and a gastrojejunal anastomosis was performed in 2 layers. The first layer was a running stitch of 2–0 Polysorb to the posterior layer, carried out to the anterior layer. The second layer was interrupted seromuscular stitch between the jejunum and the pouch using 2–0 Polysorb. An Edlich tube was passed through the anastomosis and air was used to test the anastomosis.

Results: Postoperatively the patient did well. An upper GI was performed on POD#2 to check for any obstruction or leak, revealing neither. At that time the diet was advanced to clear liquids. This was tolerated well and patient was discharged home on POD #4.

Conclusion: Despite multiple abdominal surgeries, complicated anastomotic ulcers can be managed by laparoscopic resection and reconstruction in appropriately selected patients.

VS.35 Technical Aspects of Reversing Gastric Bypass to Normal Anatomy a Video Demonstration

PRESENTER: M. Ekelund¹

Co-author: S. Frederiksen¹

¹Skåne University Hospital & Lund University, Surgery, Lund-Sweden

Introduction: Gastric bypass is known to improve or even cure several obesity-associated disorders such as hypertension, incontinence, obstructive sleep apnea, type II diabetes, pseudotumor cerebri and hyperlipidemia. Furthermore quality of life improves for the majority. However, a minority of patients do have complications. In very few of these, reversal to normal anatomy is the only and final option.

Method: During the last years we have reversed four patients from gastric bypass to normal anatomy. Three was done by open technique and one by laparoscopy.

Results: Patient 1. Internal herniation and massive bowel resection. 50 cm small bowel left. Now off parenteral nutrition. Patient 2. Chronic therapy-resistant ulcer. Cured from ulcer. Patient 3. Chronic abdominal pain and malnutrition. Off opioids and have gained weight. Patient 4. Severe subjective discomfort and dissatisfaction. No complication to reversal. Short follow-up-time and thereby no long-term outcome.

Conclusion: Reversal of gastric bypass is feasible and safe.

Laparoscopic approach may be considered with technical considerations as demonstrated in the video.

VS.36 Laparoscopic Distal Pancreatectomy After Laparoscopic Mini Gastric Bypass

PRESENTER: H. Haidar Ahmad¹

Co-authors: D. Wong¹, N. de la Cruz-Munoz¹

¹University of Miami Miller School of Medicine, Surgery, Doral- United States

Obese patients are at increased risks of several malignancies. Therefore, occasionally, a post bariatric surgery patient presents with a neoplasm that needs treatment. This is a case of a 56 year female who presented with a complex mass at the tail of the pancreas three years after receiving a laparoscopic mini gastric bypass at an outside institution. After a work up that could not exclude a malignancy, she was taken for a laparoscopic distal pancreatectomy.

The video shows the procedure and the differences seen due to her prior bariatric surgery. Care was taken not to injure her alimentary loop or gastric remnant during the procedure.

VS.37 Complex Gastro-jejunal Fistula with Anastomotic Stenosis After Mini Gastric Bypass: Laparoscopic Conversion into Roux and Y Gastric Bypass

PRESENTER: M. Robert¹

Co-author: C. Gouillat¹

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Introduction: A 47-year-old man was referred to us 10 months after a Mini Gastric Bypass (MGB) because of chronic dysphagia leading to aphagia and severe malnutrition. The patient had lost 57 kg.

Method: diagnostic work-up included an upper endoscopy which revealed a complete gastro-jejunal anastomotic stenosis with a blind fistula. A gastric computed tomography with gas confirmed the anastomotic stenosis and the absence of peritoneal abscess.

Prealbumin plasma level was very low (0.13g/l). A laparoscopic conversion into Roux and Y gastric bypass (RYGBP) was proposed after preoperative nutrition support.

Results: a laparoscopic redo surgery was performed. The exploration revealed a complex gastro-jejunal fistula with the remnant stomach and severe adhesions of the transverse colon. A methylen blue test confirmed the complete anastomotic stenosis. We performed a resection of the gastro-jejunal anastomosis and a partial excision of the remnant stomach. The gastric pouch was resized and the omega limb was converted into a Roux and Y gastric bypass with a long biliary limb and a 70 cm alimentary limb. Operative time was 215 minutes. Postoperative period was uneventful and the patient was discharged on postoperative day 4. Oral nutrition was possible without dysphagia.

Conclusions: Laparoscopic conversion of MGB into RYGBP for anastomotic complications is sometimes difficult but feasible. It is an effective solution to treat this complex situation.

VS.38 Performing Bariatric Surgery in Patients with Restricted Intra-peritoneal Access: A Video Presentation

PRESENTER: R. Aguilo¹

Co-authors: S. Agrawal¹, Y. Koak¹

¹ Homerton University Hospital, Bariatric Surgery, London-United Kingdom

Introduction: Difficulty in gaining intra-peritoneal access in patients with a restricted intra-peritoneal compartment can prevent completion of bariatric surgery and abandonment of the procedure. We present a video case series of four patients where access was restricted and a modified bariatric procedure was performed to complete the operation, and one repair of a complication.

Method: A prospective evaluation of patients with restricted intra-peritoneal access was performed to determine an appropriate strategy to modify the bariatric operation to achieve completion of the procedure.

Case 1: A 57 year old female patient had a modified sleeve gastrectomy performed due to very large long-standing umbilical hernia which incorporated the stomach.

Case 2: A 46 year old male had a restricted sub-diaphragmatic intra-thoracic compartment where a gastric bypass procedure was modified to a horizontal pouch with longer malabsorptive component.

Case 3: A 71 year old female patient who underwent previous open midline cholecystectomy had a modified sleeve gastrectomy performed laparoscopically.

Case 4: A 49 year old female who underwent a previous incisional hernia repair had extensive intra-peritoneal and stomach adhesions which necessitated modified laparoscopic sleeve gastrectomy.

Case 5: A 65 year old female had a perforation of a previous laparoscopic Roux-en-Y gastric bypass gastrojejunal anastomosis that was repaired by refashioning laparoscopically.

Results: All patients underwent a modification of the usual bariatric procedure. All cases were completed successfully and laparoscopically.

Conclusion: Bariatric surgery procedures can be modified in cases where intra-peritoneal access is restricted.

VS.39 A Rare Complication of Laparoscopic Gastric Banding (LAGB) - Concomitant Gastric and Colonic Migration

PRESENTER: C. Copaescu¹

Co-authors: S. Filip¹, B. Smeu¹, I. Hutopila¹, M. Priboi¹

¹Delta Hospital, Minimally invasive and Bariatric Surgery, Bucharest- Romania

Background: LAGB is recognized as an effective and safe surgical treatment for obesity. The band erosion is a well-known late complication, but migration of the device through the small bowel or the colonic wall represent a very rare complication after LAGB; only few cases are reported in the literature.

Aim: this case presents our surgical strategy for a simultaneous migration of the device into the stomach (the ring) and into left colon (the connecting tube).

Method and Results: The patients has been operated for morbid obesity 7 year before by placing a Lap Band. 6 months after the procedure the reservoir has

been explanted due to the rejection of the access port. The connection tub was abandoned in the peritoneal cavity. The patient had no follow-up visits for 6 years. In December, 2012, the patient presented a trans-anal prolapse of the connection tube. No other clinical sign were mentioned. EWL = 65% at 7 years. This video presents the preoperative work-up – recto colonoscopy, barium enema, abdominal CT, irigography) and the particular aspects of the combined laparoscopic transgastric band removal with the colonoscopic connecting tube extraction. A further metabolic procedure to maintain the weight loss may be required at least 6 months after the surgery.

Conclusion: A rare complication after LASGB was presented. Our strategy to combine the laparoscopic transgastric band removal and colonoscopic connecting tube extraction was a safe and efficient solution. A further metabolic procedure to maintain the weight loss may be required.

VS.40 Redo in Bariatric Surgery for Non Bariatric Indications; Laparoscopic Management of Gastric Volvulus with Hiatal Hernia 2 Years Post to Laparoscopic Sleeve Gastrectomy

PRESENTER: A. Soliman¹

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²Cleveland Clinic Florida, Minimal Invasive & Bariatric Surgery, Florida-United States

Introduction: Laparoscopic sleeve gastrectomy (LSG) in morbid obesity has proved to be a safe and reproducible technique. However is not free of complications. Gastric volvulus is reported either because of laxity of the gastric anatomical fixations or improper dissection of the back of stomach.

Method & Results: We report a case of female patient in the post-operative period immediately following LSG presented early symptoms of upper gastrointestinal occlusion indicative of gastric volvulus of the gastric sleeve. Follow up investigations include Barium swallow and UGIT endoscopy showing associated Hiatal Hernia and no obstruction but twisting of the mid-stomach with intractable reflux signs. We performed a laparoscopic dissection of the stomach back and correction of the stomach axis tube with freeing of related adhesions of the gastric sleeve and then laparoscopic hiatal hernia repair with anterior fundoplication

Conclusion: Sleeve gastrectomy leaves the stomach with no fixations, which may predispose to volvulus. This complication is a rare finding to be reported to date following this intervention, but still needs to be considered in this type of patient.



Fig. (1): Gastrograffin Swallow for a female patient presented with frequent vomiting, dysphagia for soft and solids with anorexia for 2 years post to laparoscopic sleeve gastrectomy showing cut of the dye at the level of mid-stomach with slow passage of dyes suggesting gastric volvulus

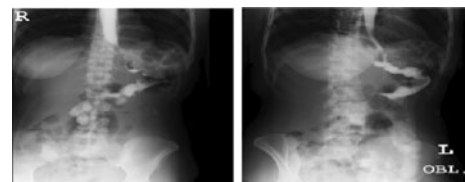


Fig. (2): Gastrograffin Swallow 3 days after for laparoscopic correction of gastric volvulus and repair of hiatal hernia showing the stomach tube with free passage of dye till the small bowel.

VIDEO KIOSK

VK.01 Cecal Volvulus After Roux-en-Y Gastric Bypass**PRESENTER: M. Jawad²**Co-authors: N. Shah¹, R. Moon², A. Teixeira²¹Orlando Regional Medical Center, Department of General Surgery, Orlando-United States²Orlando Regional Medical Center, Department of Bariatric Surgery, Orlando-United States

Introduction: A 51-year-old female status post Roux-en-Y gastric bypass presented with chronic right upper quadrant pain. She had a history of laparoscopic cholecystectomy and common bile duct exploration with choledochoduodenostomy due to chronic abdominal pain.

Materials and Methods: Veress needle was inserted in the left upper quadrant and the abdomen was insufflated. A 5mm trocar was placed in the left upper quadrant, a 10 mm trocar was placed above the umbilicus and two more were placed in the right and left upper quadrants respectively. No adhesions were noted. No abnormalities were noted in the gastrojejunostomy or the blind limb. The bowel was run to the ileocecal valve and no obstructions were noted and the Peterson's defect was closed. Upon inspection, cecum was found to be completely rotated to the left side, located mainly in the right upper quadrant and kinked on itself. The floppy cecum was thought to be due to the significant weight loss, which has led to chronic volvulization of the cecum. A cecopexy was performed by suturing the tenia to the anterior abdominal wall with a running 2–0 Polysorb stitch.

Result: The patient tolerated the procedure well and was discharged home post operatively.

Conclusion: Patients with significant weight loss after Roux-en-Y gastric bypass may present with cecal volvulus.

VK.02 Laparoscopic Reversal of Roux-en-Y Gastric Bypass Due to Malnutrition and Unintentional Weight Loss**PRESENTER: M. Jawad¹**Co-authors: R. Moon¹, A. Teixeira¹¹Orlando Regional Medical Center, Department of Bariatric Surgery, Orlando-United States

Introduction: 40 year-old female presented with a history of malnutrition and unintentional weight loss. The patient had Roux-en-Y gastric bypass (RYGB) 10 years ago and has lost approximately 280 lbs. She lost 30lbs within the recent two months. She was unable to maintain her weight despite eating every 1–2 hours, and required PEG tubes due to malnutrition. The patient was admitted for reversal of the RYGB.

Method: Veress needle was inserted in left upper quadrant, the abdomen was insufflated, and six trocars were inserted. Adhesions were taken down between the left lobe of the liver and the pouch. The jejunum was separated from the pouch. Gastrostomy was made at the corner of the pouch and at the stomach remnant, and anastomosis was created using a linear stapler. Opening of the gastrogastrostomy was closed in 2 layers, a running 2–0 Polysorb stitch in the first layer and interrupted 2–0 Polysorb stitch in the second layer. Another anastomosis was created between the Roux limb and the biliopancreatic limb using linear stapler. The opening of the anastomosis was closed with two applications of linear stapler.

Result: The patient complained of abdominal pain and nausea postoperatively. The upper gastrointestinal imaging showed delayed emptying distally, but the abdomen x-ray and computed tomography scan did not show any obstruction. She was managed conservatively and was discharged home on post-operative day 7 tolerating diet.

Conclusion: Reversal of the RYGB may be needed in patients with malnutrition.

VK.03 A Stepwise Approach to Treat a Petersen's Hernia**PRESENTER: A. Jamel Coelho¹**Co-authors: A. Porto Zaccaron¹, J. Ferreira Manso², L. Castro³¹Obesoprotocenter, Bariatric, Rio De Janeiro-Brazil²Universidade Federal Do Rio De Janeiro, Surgery, Rio De Janeiro-Brazil³Obesoprotocenter, Colon and Rectal Surgery, Rio De Janeiro-Brazil

In this video we demonstrate our approach to treat the Petersen's hernia quickly and in our opinion safely, by reducing the amount of bowel manipulation. Four ports are used: A 11 mm in the umbilicus for the optic, a 5 mm in the right hypocondrium in midclavicular line, a 11 mm in the left hypocondrium same line and a 5mm in the left flank in anterior axillary line.

The operation is standardized in two steps:

STEP 1- Identify The Transverse Mesocolon And Alimentary Limb

In this step no bowel manipulation is performed, with the left hand we expose the transverse colon and seek with the scope for the alimentary limb that is of course antecolic.

STEP 2- Push the Bowel From Right To Left Of The Patient

Now all the bowel loops that are at the right of the patient are pushed from right to left through the area of the defect (that we don't see yet, but by the anterior step we know is there) we do it in alleatory movements, there is no need to identify specifically any segment. Finally our movements will end in the open defect.

After that, with the help of the assistant surgeon the transverse colon kept in lift position and we apply a running suture of ethibond 3–0 that begins just below the colon on its mesentery in the back and in the mesentery of alimentary limb in front and ends in the root of both mesenteries.

VK.04 Bariatric Surgery Complications and Management**PRESENTER: W. Lutfi Bukhari¹**Co-authors: A. Salih Elnati¹, M. Amjad Akbik¹, K. FathElrahman Bakier¹, A. Elhoush¹¹International Medical Center, Advanced Laparoscopic & Bariatric Surgery, Jeddah-Saudi Arabia

Introduction: Bariatric and Metabolic Surgery is a highly sophisticated technical & surgical approach to manage people of morbid obesity and diabetes mellitus (D.M.) Type II and the subsequent multiple health and metabolic complications.

Method: 1050 had sleeve Gastrectomy 450 (Revision) 405 had Roux-en-y gastric bypass 200 (Revision) 95 of them is fobi banded bypass 3 patient duodenal switch with biliopancreatic diversion 97 patient with gastric banding & balloon Complications with:

A) Sleeve Gastrectomy group:

8 gastric leaks (0.7% of 1150 pts).

(3 PATIENTS WERE REVISION)

8 patients had bleeding (0.7%)

(6 PATIENT WERE REVISION)

Respiratory complications in 5 patients (0.4%)

(ALL REVISION CASES)

B) Roux en Y Gastric Bypass group:

2 gastric leaks (0.5%)

(1 PATIENT REVISION)

10 patients had bleeding (2.5%)

(6 PATIENTS REVISION CASES)

2 patients had respiratory complications

(0.5%)

(1 PATIENT REVISION)

Results: During the course of this presentation, I'll demonstrate 6 cases & explain how we give each individual presentation of each type of complications

the most adequate & sufficient rout of management to pass with patient to safety & restore his normal life.

Conclusion: We are showing some of these complications & how we managed each individually upon our experiences.

VK.05 A Swallowed Band: Chronic Erosion and Intraluminal Migration of a Laparoscopic Gastric Band

PRESENTER: A. Nadler¹

Co-author: T. Penner²

¹University of Toronto, General Surgery, Toronto-Canada

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Introduction: This video illustrates the management of a unique laparoscopic gastric band complication involving chronic band erosion through the gastroesophageal junction and intraluminal band migration into the jejunum.

Method: A 28 year old woman presented two years following the insertion of a laparoscopic gastric band with abdominal pain, vomiting, and constipation. She was clinically well, with no signs of peritonitis. A computed tomography scan of the abdomen revealed the presence of the band in the jejunum, with no evidence of perforation. An exploratory laparoscopy was undertaken to manage the gastric band related complication.

Results: An exploratory laparoscopy identified a chronic, well-healed erosion of the gastric band through the gastroesophageal junction with subsequent intraluminal migration of the band into the jejunum resulting in a partial small bowel obstruction. A longitudinal enterotomy was created at the site of the band in the jejunum and it was extracted through this site. The enterotomy was closed in a transverse fashion. An upper endoscopy was performed and revealed intact gastric mucosa with a subtle scar below the gastroesophageal junction, but no perforation or leakage.

Conclusion: This video illustrates the laparoscopic management of a migrated gastric band following chronic erosion into the gastrointestinal tract. This represents a rare complication following laparoscopic gastric band placement.

VK.06 Acute Postoperative Incarceration of a Sleeve Gastrectomy in a Hiatal Hernia

PRESENTER: N. Beglaibter¹

Co-author: R. Grinbaum¹

¹Hadassah Mount Scopus University Hospital, Surgery, Jerusalem-Israel

A morbidly obese (BMI 46 Kg/m²) 45 years old woman without any symptoms of GERD and a normal preoperative Barium swallow underwent an uneventful laparoscopic sleeve gastrectomy. Upper GI on post-operative day 1 revealed obstruction of contrast flow at the EGJ. The patient was vomiting saliva. During the following week 2 endoscopies showed passage through the upper part of the sleeve but no passage to the sleeve antrum due to a twist/angulation at the mid portion of the sleeve. A CT finally demonstrated a strangulated hiatal hernia of the proximal part of the sleeve. We present a video of her second laparoscopy. We found the upper third of the sleeve to be incarcerated in the mediastinum via the diaphragmatic hiatus. The incarcerated part of the sleeve was edematous and engorged. It was totally reduced to the abdomen and the diaphragm was repaired by primary suture closure. Post-operative course was uneventful, UGI demonstrated free passage of contrast and no hernia. She was discharged tolerating liquid diet. This rare complication underscores the importance of identifying the presence of crural defect during the sleeve gastrectomy and concomitant repair.

VK.07 Decision Making and Feasibility for Removing the Gastric Remnant During Gastric Bypass: Video Report of Two Cases

PRESENTER: L. Leuratti¹

Co-authors: M. Alfa-Wali¹, G. Bonanomi¹

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Introduction: In bariatric surgery intraoperative unexpected findings can sometime lead to abort a procedure or prompt a change of the surgical plan. The increasing number of procedures will probably expose surgeons to a higher incidence of unexpected findings during gastric bypass (RYGB) that might need immediate intraoperative management. We present two cases of incidental findings that required a remnant gastrectomy.

Methods: In the first case a patient was scheduled for a laparoscopic RYGB following an endoscopic gastric band removal one year before for an extensive gastric erosion. The video shows how a remnant gastrectomy was necessary following the sudden appearance of ischaemic changes of the fundus after the creation of the gastric pouch. The second case shows the incidental finding of a large gastrointestinal stromal tumor (GIST) of the gastric antrum that was treated with a remnant gastrectomy.

Results: Both procedures were completed laparoscopically and did not affect the final outcome in terms of surgical reconstruction. Post-operative stay was uneventful in both cases. Histology confirmed the GIST nature of the lesion and the patient did not need further surgery or adjuvant therapy but was put under oncological surveillance.

Conclusion: Intraoperative unexpected findings requiring the gastrectomy of the remnant can safely be managed laparoscopically in a single step. Surgeons should be aware about the decision making process that could lead to a change in the surgical plan in the patient's best interest.

VK.08 Laparoscopic Repair of Perforated Marginal Ulcer Following Roux-en-Y Gastric Bypass

PRESENTER: R. Grinbaum¹

Co-author: N. Beglaibter¹

¹Hadassah Mount Scopus University Hospital, Surgery, Jerusalem-Israel

Introduction: Marginal ulceration is a known complication of Roux-en-Y gastric bypass (RYGB). Laparoscopic repair may be a feasible repair minimizing morbidity associated with a laparotomy.

Case: 52 years old women had undergone LAGB removal due to infected port followed 8 months later with a laparoscopic RYGB (antecolic, antegastric). Her BMI initially had dropped with the LAGB from 39 to 23 but after band removal increased to 31. She has been a smoker and was maintained on regular PPI therapy. She presented to the ER a year postoperatively with acute epigastric pain. Abdominal computed tomography revealed an abscess in the previous lesser sac and gastrograffin upper gastrointestinal series confirmed a leak at the gastrojejunostomy anastomosis. She was taken to surgery and a perforated ulcer was found at the posterior jejunal side of the gastrojejunostomy. This was treated with oversewing and drainage. She recovered uneventfully and maintained on PPI therapy.

Conclusion: A laparoscopic repair can be completed safely and effectively, with minimal postoperative hospitalization, and low associated morbidity.

VK.09 Mistakes with the Nasogastric Tubes During Laparoscopic Bariatric Procedures

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Co-authors: C. Martinez Blazquez¹⁻², J. Vitores Lopez¹⁻², V. Sierra Estban¹⁻², J. Valencia Cortejoso¹⁻², I. Esquiroz¹⁻², J. Barrutia Leonardo¹⁻², I. Angulo¹⁻², A. Gaston¹⁻², A. Maqueda¹⁻², A. Martinez De Aragon², N. Vicente Vicente²

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²Endocrinologist, Vitoria

There are many reports in bariatric surgery about complications in the postoperative as fistulas, stenosis, weight regain, resolution of comorbidities, Laparoscopic bariatric surgery is a difficult surgery in itself but much more because of the patients weight with a lot of fat

and long distances for working. Nasogastric tube are used during bariatric surgery in many times. Emptying the stomach, in order to calibrate the gastric tube during sleeve gastrectomy, when we introduce the Orvil for circular anastomosis in Gastric By-pass and commonly after surgery in order to get information of bleeding and to decompress the gastroyejunal anastomosis in the postoperative period. Usually introduced by the anesthesiologist and/or the nurses we have to be very care about it and never let our guard down. We preset some video clips showing some mistakes that took place during bariatric procederes with the nasogástric tube and how we resolved them. It is very importat to keep in mind nasogastric tubes during bariatric procedures to prevent serious complications.

VK.10 Is He a Patient of Bariatric Surgery or a Book on Operative Bariatric Surgery? - An Interesting Case Report

PRESENTER: M. Narwaria¹

¹ Ahmedabad Bariatric & Cosmetic Pvt. Ltd., Bariatric Surgery, Ahmedabad-India

Now a days bariatric surgery are one of the commonly done procedures as they are giving more promising results in achieving and maintaining weight loss and in resolution of metabolic diseases. As the numbers of procederes are on the rise, the redo / revision surgeries in bariatric procedures are also on the rise. Here we present our experience in our patient who underwent multiple procedures which includes almost every bariatric procedure done for obesity.

Laparoscopic Gastric Banding (Elsewhere) No Weight Loss – Band removal & Rebanding (Elsewhere) → No Weight Loss / Band Erosion – Band to Sleeve (Elsewhere) Incomplete sleeve because of adhesions in upper part of stomach → NO WEIGHT LOSS → CAME TO US BPD with common channel 100 cms Patient developed Intestinal Obstruction in the post-operative period stricture at gastric anastomosis site detected radiologically → Revision of anastomosis → Patient lose adequate weight / develops diarrhea & Protein Calorie Malnutrition →Feeding Jejunostomy → diarrhea & Protein Calorie Malnutrition not controlled → Lengthening of Common Channel to 150 cms → develops diarrhea & Protein Calorie Malnutrition after sometime → TPN tried & failed → Lengthening of Common Channel to 250 cms → patient comfortable

VK.11 Laparoscopy Assisted Transgastric Endoscopy and Remnant Gastrectomy for Lynch Syndrome After Gastric Bypass

PRESENTER: M. Jawad¹

Co-authors: R. Moon¹, A. Teixeira¹

¹Orlando Regional Medical Center, Department of Bariatric Surgery, Orlando-United States

Introduction: 51 year old female with history of RYGB 3 years ago was recently diagnosed with Lynch syndrome. Lynch syndrome is an autosomal dominant genetic condition which has high risk of colon cancer as well as other cancers including endometrium, ovary, stomach, small intestine, hepatobiliary tract, upper urinary tract, brain, and skin.

Materials and Methods: She was attempted for double balloon endoscopy at an outside facility that was unsuccessful. So she was taken to the operating room for laparoscopic assisted transgastric endoscopy with possible remnant gastrectomy if multiple polyps were encountered. As expected, multiple polyps were seen. Multiple biopsies were taken and sent for frozen section. Although all the frozen sections were negative for any malignancies, due to the number of polyps and the need for more close follow up with EGD, the decision was made to perform a remnant gastrectomy.

Result: Postoperatively the patient did well, home on POD # 2 on full liquid diet. The final pathology was negative for all the specimens.

Conclusion: Close follow up on patients with Lynch syndrome is technically challenging when they have a history of RYGB. Laparoscopy assisted transgastric endoscopy and/or remnant gastrectomy may be an option in these patients.

VK.12 Dysphagia Following Two Stages Band-to-Sleeve Revision. A Call for a Complete Fundus Unwrapping During Band Removal Procedures

PRESENTER: H. Spivak¹

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¹Chaim Sheba Medical Center, The Center For Treatment Of Morbid Obesity, Tel Hashomer-Israel

A revision from adjustable gastric banding to gastric sleeve can be done in one stage or two stages (removal first, followed by revision). This case is about reoperation for dysphagia that followed a two stage procedure where the fundus wrap was not taken down completely in the band removal procedure.

Following a few years of intolerance the patient had her adjustable gastric banding removed. Apparently and as typically performed, the band was removed without taking down the gastro-gastric sutures or unwrapping the gastric fundus. Six months later, a revision to sleeve was performed and due to difficult adhesions the stapler line was placed over a bougie lateral to the wrap. The patient experienced post operative dysphagia which continued for months after. She underwent non diagnostic swallow studies (n=4), CT (n=1) and gastroscopies with dilatations (n=3). This video presents the laparoscopic exploration a year later where a twisted and wrapped fundus was found. The fundus wrap was taken down and transected. Following this procedure the patient's symptoms mostly resolved and a repeat swallow study confirmed the repair.

Most surgeon will not undo the fundus wrap in a simple gastric banding removal. However, in cases where a revision is anticipated, unwrapping of the gastric fundus is mandatory preferably during the band removal or at least at the revision procedure. Keeping the wrap intact could cause dysphagia that may not respond to dilatations and could require an additional surgery.

VK.13 Withdrawal of a Migrated Laparoscopic Adjustable Gastric Band (LAGB)

PRESENTER: L. Urrutia¹

Co-authors: M. Berry¹, M. Schulz¹

¹Clinica Las Condes, Unit of Bariatric and Metabolic Surgery, Santiago- Chile

Introduction: LAGB has proven to be an effective surgical technique for obesity control and its co-morbidities, however it presents complications such as migration (1-6%), slippage, esophageal dilation among others. Most of these complications require removal of the device. The revision of a migrated laparoscopic adjustable gastric band (LAGB) has become a relative uncommon scenario in bariatric surgery. The purpose of this video is to show the surgical technique used in our center in migration cases.

Method: Video of a revisional surgery: laparoscopic removal of a migrated LAGB.

Technique:

1. Veress needle pneumoperitoneum to 15 mmHg.
2. Usual technique for trocars placement
3. Release of the band connection tube.
4. Gastrotomy between reins
5. Cutting of the band migrated with scissors.
6. Extraction of the band, prior cutting of the connector tube.
7. Locking points close to where the band was located
8. Closing Gastrotomy.
9. Removal of the device from the abdominal cavity.
10. Removing the access port.
11. Extraction of trocars under vision
12. Umbilical port closure

VK.14 Two Cases of Laparoscopic Removal of Gastric Band Completely Eroded in the Stomach

PRESENTER: A. Goralczyk¹

Co-authors: F. Villa¹, K. Mannur¹

¹Homerton University Hospital, bariatric surgery, London-United Kingdom

Introduction: We are presenting the cases of a 54 year old woman who had laparoscopic gastric band (LGB) (Swedish) placed in 2006 and a 64 year old gentleman with intense surgical history who had the LGB in 1997, and open incisional hernia repair complicated by long standing seroma requiring debridement and VAC dressing in 2004. Both referred to Homerton Hospital for removal of gastric bands (GB) due to their erosion into the stomach. Erosions were diagnosed by swallow tests and OGD. The videos describe the laparoscopic removals of the bands, the difficulty in approaching the abdominal cavity because of previous adhesions and the laparoscopic gastrotomy to retrieve the bands completely eroded into the stomach. On table gastroscopies was performed. Harmonic scalpel was used to dissect the residual band capsules and to perform a gastrotomy to allow the retrieval of the band into the peritoneal cavity. In the woman's case, the dissected fundus was closed by fundus resection (partial sleeve gastrectomy), while continuous suture was applied to close the gastrotomy in the man's case.

Method: Video presentation GB retrieval through laparoscopic gastrotomy.

Results: Safe removal of GB in two complex cases.

Conclusion: Gastric band is a foreign body and should be always treated as such. Regular follow up is paramount. Erosion of the GB should be suspected and investigated when the patient experiences epigastric pain and vomiting. In the event of proven erosion it is important to remove it immediately to avoid further damage to the gastric fundus.

VK.15 Laparoscopic Roux-limb Placement for the Management of Chronic Proximal Fistulas After Sleeve Gastrectomy

PRESENTER: R. Vilalonga¹

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is an increasingly popular bariatric procedure. However, after LSG, leaks may occur that are difficult to treat and that can persist for months. Treatment is controversial and ranges from stent placement to total gastrectomy. We propose an alternative laparoscopic treatment. The aims of our study were to report on the incidence of chronic fistulas after LSG and the outcome of Roux-limb placement on these defects. The setting was a major teaching hospital in Belgium. **METHODS:** From January 1, 2002, to December 31, 2011, we performed LSG as a primary weight loss operation (PLSG) in 728 patients and as a corrective operation (CLSG) in 84 patients. A retrospective chart and database review was conducted. When a chronic leak persisted beyond 4 months, we performed a laparoscopic Roux-limb placement on the defect.

Results: Leaks occurred in 26 patients (3.6%) after PLSG and in 6 (7.1%) after CLSG. A leak persisted beyond 4 months in 7 patients (26.9%) after PLSG and in 2 patients (33.3%) after CLSG. Two patients with a chronic fistula after PLSG were referred to our hospital. In 11 patients, a Roux limb was laparoscopically sutured to the defect. The mean time for a chronic fistula to heal after Roux-limb placement was 12.5±10.2 days, and the mean length of hospital stay was 19.6± 14.2.

Conclusion: Proximal leaks after LSG are relatively rare. However, a significant number become chronic. Laparoscopic placement of a Roux-limb on the defect is a safe treatment with an eventual success rate of 100%.

VK.16 Minimal Access Management of Mirizzi's Syndrome Type IV Complication After Gastric Bypass: A Video Presentation

PRESENTER: R. Aguilo¹

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Introduction: Mirizzi's syndrome is a rare complication of gallstone disease characterised by compression of the common hepatic duct by an impacted gallstone. Grade IV disease includes a choledochobiliary fistula with erosion of the full circumference of the bile duct. We present a case of Mirizzi's syndrome grade IV occurring 14 months after laparoscopic gastric bypass (LRYGB) and describe successful management of this case by minimal access technique. BMI prior to LRYGB was 51.5kg/m² and the patient had achieved 60% excess weight loss.

Method: This video demonstrates the joint laparoscopic and intra-operative ERCP procedure that was undertaken to deal with this complex disease. After adhesiolysis a laparoscopic cholecystectomy was performed. A fistulous connection was noted between Hartmann's pouch and the right hepatic duct, with a large 1cm calculus located in the distal right hepatic duct. Findings were confirmed by on-table cholangiogram. Intraoperative ERCP with sphincterotomy was successfully performed via a 15mm port through the remnant stomach. Retrieval of the calculus necessitated laparoscopic widening of the fistula tract. Laparoscopic repair of the fistula track and right hepatic duct was performed.

Results: Postoperatively a persistent bile leak was managed successfully with insertion of a PTC-guided drain, removed after one week. Postoperative review at 1 year showed successful resolution of her complex gallstone disease.

Discussion: Despite difficulty of access complex gallstone disease and Mirizzi's syndrome developing after LRYGB can be satisfactorily managed by a minimal access technique. To our knowledge this is the first documented report of Mirizzi's syndrome occurring after bariatric surgery.

VK.17 Re-revisionary After Gold Standard Bariatric Procedure – When the Stomach Pouch Does Not Exist

PRESENTER: W. Karcz¹

Co-authors: S. Küsters², M. Zimmermann¹, K. Schmidt¹, J. Grueneberger²

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Background: A lot of surgical approaches have been described as revisionary Surgery. We would like to present the Case of patient with primary RYGB and following history before he come to our Clinic: one year later pouch dilatation and REDO RYGB operation with creation "Micro- Pouch". In Gastroscopy and 3DCT Reconstruction could not identify the Gastric Pouch at all. The Patient after the second operation gained the weight to BMI 41. We decided to introduce the malabsorption on the first line to reduce the weight. We performed the Lemmens/Himpens procedure: we cut off the distal end of AL created 150cm CC. After 8 months the patient with BMI 32 received the final operation: DS with the proximal end of the AL, than Oesophago-Gastro anastomosis with EEA 25 Stapler. The Stomach Pouch after it was resected on 42 Ch Stomach till 3 cm from Pylorus to become the volume of 40-50ml. The patient 8 months after the last operation has 27 BMI with no GERD and no malabsorption. We would like to present video of our revisionary operation technique

VK.18 Re-revisionary: Sleeve on the Large Stomach Curvature – What to Do to Help the Patient?

PRESENTER: W. Karcz¹

Co-authors: M. Zimmermann¹, K. Schmidt¹, A. Schrocht¹

¹UKSH, General Surgery, Lübeck-Germany

Background: A lot of surgical approaches have been described as revisionary Surgery. We would like to present the Case of patient with primary LAGB and following history before he come to our Clinic: with the primary operation he lose about 45 kg. and start to gain the weight till 140 kg. After that he received an extraordinary sleeve on the Large Stomach Curvature. As we all know from the Bariatric Surgery it could not function because the horizontal Gastroplasty did not functioned in 1960s and horizontal formation of Mason Gastric Bypass failed because of stomach pouch and GE dilatation! The answer is easy the large curvature will always stretch because of it's physiological muscle construction. We all known what happened when the surgeon leave the some fundus in situ by sleeve resection. Finally the patient did not have the restriction at all already 6 weeks after the operation. He did not lose the weight. In Vascular CT we could not find the left stomach artery. The Patient after the second revision operation gained the weight to BMI 45. We decided to introduce the malabsorption on the first line to reduce the weight. We performed the IDS (Krawczykowski procedure) with CC 100cm. We are planning to perform In 4 months when the patient have BMI about 35 the final operation (before the IFSO Congress): The Stomach Pouch reconstruction, Adhesions will be removed, the upper part of stomach will be removed between the Z-line and the Stomach Corpus, than the Oesophago-Gastro anastomosis will be done, after that we will see it the blood supply from right stomach artery is able to supply the stomach and eventually we will resect on 42 Ch the large Stomach Curvature till 3 cm from Pylorus to become the volume of 80 ml. The patient is operated with the first step right now We will be happy to present the next operation, the result is unknown and this is the reason why it is so interesting to see what we can achieve in such case difficult case.

VK.19 A Particular Stenosis After Sleeve Gastrectomy: Proximal Intraluminal Septum. The Case Management

PRESENTER: C. Copaescu¹

Co-authors: B. Smeu¹, S. Filip¹, I. Hutopila, M. Priboi¹

¹Delta Hospital, Minimalinvasive and Bariatric Surgery, Bucharest-Romania

Background: Gastric tube narrowing after sleeve gastrectomy is one of the postoperative complications that can impair the outcome of metabolic patients. It is more frequent described as an immediate postoperative complication which can lead to fistula appearance, but less frequent as a late postoperative finding. The intraluminal gastric septum is rare and particular late postoperative finding and thus providing new challenges.

Objective: This video presents the modified gastric anatomy and the consequences of the proximal intraluminal septum demonstrated by the radiological, endoscopic and surgical study. Also, it emphasizes the advantages of laparoscopic approach in redo procedures after sleeve gastrectomy (SG), involving upper gastric pole resection with Roux-en-Y gastric bypass (RYGBP), commenting on the particular technical aspects associated with such an unusual finding.

Methods: We present the case of a 36 years old female patient who underwent a sleeve gastrectomy 3 years ago (preoperative BMI of 37kg/m², 94% excess weight loss, actual BMI of 26,6kg/m²) presented for solid food intolerance and GERD symptoms. The Upper Endoscopy showed a gastric narrowing with a double channel entry in the upper third of the stomach, due to an intraluminal septum, esophagitis Los Angeles B and a sliding hiatal hernia. The complete preoperative work-up is presented. After careful dissection of postoperative intraperitoneal adhesions, we describe particular aspects of the superior gastric pole resection performed under intraoperative upper endoscopy control in order to ensure the resection of the intraluminal septum located at 5 cm distal from cardia. Particular aspects of the hiatal hernia repair are presented. The gastro-jejunal anastomosis is realized by means of circular stapling (with intraoperative upper endoscopy check for hemostatic control) and the jejuno-jejunal anastomosis with two linear 2.5/60mm staplers.

Results: The postoperative outcome was favorable, with no signs of esophagitis on first postoperative endoscopy checkups (1 and 3 p.o. months), and total remission of symptomatology. Actual BMI: 23,8kg/m². Possible etiology of these finding is commented.

Conclusions: A particular late complication after sleeve resection – proximal intraluminal septum- was presented. The management of this complex case was demonstrated. The endoscopic assisted laparoscopic gastric resection followed by RYGBP associated with hiatal hernia repair has proven to be an efficient therapeutic solution.

VK.20 Tie Knot Occlusion of the Alimentary Limb in Patients Submitted to Laparoscopic Roux en Y Banded Gastric Bypass

PRESENTER: T. Szego¹

Co-authors: T. Szego¹, C. Jose Lazzarini Mendes¹, A. Bitran¹

¹CCO, Bariatric Surgery, Sao Paulo-Brazil

Introduction: One of the most common Bariatric Techniques is Laparoscopic Roux En Y Gastric Bypass with or without banding.

Some complications may happen with the silicone ring, like band erosion or slippage on the gastric pouch or bowel obstruction due to slippage of the intestine through the ring. Case presentation: The authors present three cases of alimentary limb obstruction caused by sliding through the silicone ring. All patients presented with severe abdominal pain and saliva vomiting. One of them was a 24-week pregnant woman and was operated upon these symptoms. The other two patients were submitted to CT scan that showed, in both, an image of the obstruction of the alimentary limb that resembles a "tie knot". That feature was confirmed during the laparoscopic operation. The correct interpretation of the patients complain and radiologic images is very important for the diagnose and to decide the right treatment.

Conclusion: The symptoms of bowel obstruction in patients submitted to Roux en Y Gastric Bypass are not always very clear but when it occurs in the alimentary limb normally presents with pain in the upper abdominal quadrant and saliva vomiting. Due to the importance of the early diagnosis, the authors suggest special attention to painful patients after Roux en Y Gastric Bypass.

VK.21 Gastric Remnant Leak After One Anastomosis Gastric Bypass (OAGBP) - The Importance of the Close Surveillance

PRESENTER: R. Ribeiro¹

Co-authors: A. Guerra¹, L. Manacas¹, J. Pereira¹

¹CHLC, Cirurgia, Lisboa-Portugal

Introduction: A patient previously operated upon several times because of different gastric band complications (slippage and elective re-banding, strangulated diaphragmatic hernia with gastric fundus necrosis and sepsis, dealt with in the Emergency Department with f phrenorraphy and a "sleeve like resection", the patient then presented with major weight regain and recurrence of the diaphragmatic hernia.

Method: We performed a hernioplasty with mesh and an Omega Loop Gastric Bypass by laparoscopy in order to allow some more weight loss.

48 hours after the operation the patient developed bile in the drain. Early reoperation with a laparoscopic approach to identify a small leak on the gastric remnant staple line with minimal spillage or contamination.

Results: The leak was controlled with a suture repair and an omental patch and redrainage. The subsequent post operative course was uneventful and the patient was discharged 48 hours later.

Conclusion: In the presence of complex failed bariatric procedures the OAGBP can be carefully applied as a rescue that is simple to perform. The close monitoring of the patients complains and physical signs observation is essential dealing with the eventual complications.

VK.22 Management of Leaks After Laparoscopic Sleeve Gastrectomy

PRESENTER: A. Govil Bhasker¹

Co-author: M. Lakdawala¹

¹CODS and Saifee Hospital, Minimal Access and Bariatric Surgery, Mumbai-India

Introduction: Leaks are the most dreaded complication after a sleeve gastrectomy. An average leak rate of 1.06% has been reported in the literature with a range as wide as 1 to 20% across centers.

Management of sleeve leaks is extremely challenging and has to be tailored to the patient depending upon the time of presentation and the site of leak as well as the clinical condition of the patient. It requires a combination of endoscopic as well as surgical expertise.

Methods:

1. Early leaks near GE junction:

Options are a laparoscopic/percutaneous drainage ± suturing of the leak site with nasojejunal tube insertion for 3 to 4 weeks ± stent insertion ± glue insertion or endoscopic clipping.

2. Early leaks from the body or antrum of stomach:

Same as 1. Roux en-Y gastric bypass may be considered.

3. Delayed leaks: In case of an intra-abdominal abscess- same as 1. For a walled off collection, an internal endoscopic drainage into the lumen of the stomach can be attempted

Results: Here we present a collection of videos that depict endoscopic as well as laparoscopic management of leaks after sleeve gastrectomy.

Conclusions: A combination of early laparoscopic intervention alongwith endoscopic stent insertion works best for most patients with a leak from sleeve gastrectomy.

VK.23 Laparoscopic Proximal Gastric Resection for Gastro-Gastric Fistula After Laparoscopic Roux-en-Y Gastric Bypass

PRESENTER: C. Copaescu¹

Co-authors: B. Smeu¹, S. Filip¹, I. Hutopila¹, M. Priboi¹

¹Delta Hospital, Minimally invasive and Bariatric Surgery, Bucharest- Romania

Background: Gastro-gastric fistula (GGF) is a rare and important complication of the laparoscopic Roux-en-Y gastric bypass (LRYGBP).

The Aim: To demonstrate a safe and efficient laparoscopic option for the GGF treatment.

Material and Methods: All the patients who underwent LRYGBP within the last 10 years (2003–2013) and have been complicated with GGF were included in a single center study. Preoperative workup included clinical, Upper GI endoscopy and radiological studies. The particular technical aspects of the GGF treatment by laparoscopic proximal gastric resection were evaluated for these cases.

Results: 3 patients presenting GGF were identified among the total 608 patients operated on during the above mentioned period (0.5%). The upper gastrointestinal endoscopy and radiological studies revealed the GGFs presenting 1–3 orifices, with gastric pouch enlargement and normal sized gastro-jejunal anastomosis. The laparoscopic approach, demonstrated into this video, was challenging due to the adhesions from the previous surgery. The identification and exposure of the proximal gastric pouch, the gastro-jejunal anastomosis and the distal gastric remnant are presented. The particular technical aspects of the laparoscopic proximal gastric resection for the GGF treatment are presented in this video. The dissection was initiated and progressed along virgin anatomical planes, far from the lesion, offering an important technical advantage. The mean operative time was 180+/30min without intraoperative complications. Postoperative course was uneventful and the patients were discharged 3–4 days after surgery. No recurrences of GGF were recorded.

Conclusion: Laparoscopic treatment of GGF after laparoscopic RYGBP with proximal gastric resection was feasible, safe and is effective in preventing GGF recurrence.

VK.24 Laparoscopic Restoration for Persistent Dysphagia in Patient with Gastric Bypass

PRESENTER: C. Giardiello¹

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Introduction: The gastric bypass surgery is one of the most performed procedure in the world for the treatment of severe obesity. Of all the interventions bypass is recognized as the one with the best result of percentage of EWL and nutritional deficits. The limits are related to difficulties in therapeutic strategies in case of failure. However, considering that an intervention demolitive permit a complete restoration in case of problems, complications or patient's will.

Materials and Methods: The video shows the case of a patient submitted to other structure in laparoscopic gastric bypass in 2008. Come to our attention in 2012 with a body mass index of 28 with symptoms of heartburn, heartburn and dysphagia. At Rx gastrografen transit is slow and thready at the anastomosis and all'EGDS highlights the presence of an anastomotic ulcer. After 2 months, the patient returns to our observation with a BMI of 25 complaining of persistent dysphagia and vomiting. The instrumental tests show no abnormality but the patient asked for restoration. Subjected to psychological evaluation and dietetic this exhibit appropriate behavior and a strong desire for the restoration. The surgery was performed with 5 trocars. Exploration should be noted immediately that the gastro-jejunal anastomosis is angled back and has strong adhesion to the gastric remnant. In the liberation of the complex is evident anastomotic ulcer scar inseparable from the stomach that is likely the cause of dysphagia. Upstream section of the anastomosis and reunion of the stomach with mechanical latero-lateral anastomosis. Intestinal recanalization jejunio-jejunal with latero-lateral anastomosis of fasting prior section upstream of the anastomosis jejunioileal.

Results: The course was uneventful, the patient discharged after 7 days. Currently, the patient has a body mass index of 29, no dysphagia and a good compliance with the diet. In conclusion, we believe that the possibility of complete restoration after bypass is an important option to consider when choosing a surgery especially in young patients.

VK.25 Importance of Diagnostic Laparoscopy in Unexplained Dysphagia with Vomiting and Non Specific Epigastric Pain After Laparoscopic Gastric Bypass (LGB). Resolution of a Case of Twisted Alimentary Limb Where Conventional Imaging and Endoscopy Failed to Give the Answer

PRESENTER: F. Villa¹

Co-authors: A. Góralczyk¹, K. Mannur¹

¹Homerton University Hospital, Bariatric Surgery, London-United Kingdom

Introduction: It is now established that laparoscopic gastric bypass causes less complications than the open procedure mainly because it causes less adhesions and incisional hernias. Nevertheless adhesions do occur in laparoscopic surgery as well. They are often cause of pain and discomfort building up slowly or presenting rapidly in the form of sharp colicky pain. In the presence of a normal CT and OGD that casts out the spectrum of an internal hernia, patients are usually managed conservatively unless more dramatic symptoms develop.

We present video of a recent case of a 46 year old gentleman who presented one year after a successful gastric bypass complaining of partial dysphagia, nonspecific epigastric pain gradually worsening. When Abdo CT, gastrografen swallow and OGD were returned normal, diagnostic laparoscopy was performed. Laparoscopy revealed a 90° twist of the alimentary limb with adhesions to the abdominal wall, to the omentum and the biliary-pancreatic limb. The video demonstrates how we rectified the limb and secured it to the antrum.

Methods: Video presentation of laparoscopic correction of the twisted alimentary limb.

Results: Immediate resolution of the symptoms after rectification of the distorted limb.

Conclusions: Diagnostic laparoscopy is an important investigation and therapeutic measure to resolve cases that present with specific symptoms of colicky abdominal pain or nonspecific epigastric pain and unexplained partial dysphagia and should not be delayed just because of negative imaging. Internal hernias and twisting of the small bowel by adhesive bands are well known causes of such symptoms and are dealt with Laparoscopy.

VK.26 Early Postoperative Gastric Tube Obstruction Following Sleeve Gastrectomy

PRESENTER: A. Nandan¹

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CASE REPORT

- 18 year old male patient with a BMI of 34kg/m²
- no other co morbidities
- underwent Sleeve Gastrectomy after complete evaluation
- He had an uneventful intra operative and immediate post operative period.
- Started on oral liquids 6 hours after surgery and volume gradually increased
- Was tolerating liquid diet and not requiring iv fluids on third post operative day and was discharged.
- He was kept on low volume frequent liquid diet for two weeks
- Started on soft diet after two weeks
- Developed upper abdominal discomfort immediately after taking soft diet initially and soon progressed to have this symptom even after taking liquids
- At three weeks he required hospitalisation for iv fluids twice.
- Was able to swallow very low volume of clear liquids
- Never vomited
- *Barium swallow at three weeks*
- *Upper GI scopy*
- A stricture in the gastric tube at its proximal part but after the GE junction.
- Negotiable with the endoscope and distal tube up to duodenum was normal.
- Endoscopic Dilatation attempted
- Symptoms persisted
- Imp - ?stricture ? Volvulus ? adhesion
- Plan – diagnostic laparoscopy and proceed.
- Diagnostic laparoscopy
- Liquids started 6 hrs after surgery
- Discharged on pod1

VK.27 Use of Stapler to Closure Petersen Defect After Gastric Bypass

PRESENTER: M. Youssef Franciss¹

Co-authors: J. Abbud Ferreira¹, R. Ribeiro de Araujo Pereira¹, F. Furlan Nunes¹, C. Bussons¹, B. Zilbersteina¹

¹Gastromed - Instituto Zilberstein, gastrointestinal and bariatric, São Paulo-Brazil

Introduction: The laparoscopic gastric bypass is a procedure widely disseminated and used in surgical treatment of morbid obesity. With the progressive

increase of procedures performed also increases the index also complications, including internal hernias. The internal hernias may occur due to failure or not primary closing of the mesenteric or Petersen defects. Patients with internal hernia usually comes to the emergency room with abdominal pain without specific signs or symptoms, which sometimes delays the diagnosis and may difficult the surgical procedure because the bowel will be more distended and friable. To facilitate reoperation in patients with internal hernia after gastric bypass we sutured the Petersen defect using a stapler.

Methods: We performed surgery with 4 trocars (1-12mm, 1-10mm, 2-5mm). We reviewed the bowel, making sure that there was no area of necrosis. Evidenced the hernia Petersen defect, was performed to reduce of the hernia and closure of the space using a stapler.

Results: The patient recovered well and was discharged hospital 2 days after operation. Following 4 months showed no other symptoms.

Conclusion: The use of stapler for defects closure is simple and safe, and can be an option in internal hernia after bypass.

VK.28 Intraoperative Problems During Laparoscopic Sleeve Gastrectomy and Tips to Handle Them

PRESENTER: A. Kaul¹

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Aim: of this video presentation is to show intraoperative problems encountered in a series of over 800 consecutive laparoscopic sleeve gastrectomy done at a teaching center.

Our technique utilizes initial greater curvature dissection, thorough hiatal exposure and a 38 French bougie for sizing and reinforcing entire staple line with a running absorbable stitch. The following problems and how they were resolved will be discussed in the video

1. bleeding (2 cases),
2. stapling error which lead to leak at the fundus,
3. stricture at incisura with a failed attempt at myotomy and eventual conversion to gastric bypass
4. Sleeve which migrated to the chest

This video will show these problems and how we resolved them with special emphasis to demonstrate tips and tricks to handle them.

VK.29 Robotic Gastric Bypass Surgery - Initial Indian Experience

PRESENTER: A. Prasad¹

Co-authors: M. Kaur¹, K. Andrabi¹

¹Apollo Hospital, Minimal Access Surgery, Noida-India

The computer-enhanced technology and robotic precision ensure a level of surgical precision never before possible. The use of robotics is changing medicine dramatically. As the technology continues to advance and patients experience the benefits of robotic surgery, the demand for robotic procedures continues to increase.

Compared with standard laparoscopic bariatric surgery, patients treated with robotic surgery benefit from more precise and accurate surgery of the concerned region in addition to decreased blood loss. This leads to less pain, fewer complications, shorter hospital stay and faster recovery.

As with other minimally-invasive procedures, robotic bariatric surgery requires only small incisions, which minimizes trauma to tissues. Unlike standard laparoscopic techniques, robotic bariatric surgery uses customized instruments that are held by a robotic arm and controlled by a trained surgeon at a nearby console. The robotic arm allows for a greater range of motion than a human wrist, offering the surgeon improved dexterity and control, while high-definition images enhance visualization of the surgical field. The greater precision and maneuverability allow the surgeon to perform robotic gastric bypass surgery with ease and precision.

We have an experience of 15 patients who have undergone robotic gastric bypass surgery. There were no intra or post operative complications. Total operative time was comparable to our laparoscopic gastric bypass procedure time and so was the hospital stay. Requirement of post operative analgesia was less in this group. Surgeon's fatigue was evaluated using a scoring system made by us and showed less fatigue amongst surgeons, assistant and scrub nurse.

VK.30 Our Surgical Technique of Lap Duodenal Jejunal Bypass with Sleeve

PRESENTER: M.Bhandari¹

¹SAIMS, metabolic & Bariatric Surgery, Indore-India

Laparoscopic duodenal jejunal bypass with sleeve is a useful technique as it gives the freedom to endoscope the remnant considering the high incidence of ca stomach in south east asian countries. We hereby present our technique of lap duodenal jejunal bypass with sleeve gastrectomy.

VK.31 Duodenal Switch with Right Gastric Artery Ligation: Technical Aspects of the Duodenal Dissection and Duodeno- Ileal Anastomosis

PRESENTER: A. Garcia Ruiz de Gordejuela¹

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Introduction: Duodenal Switch (DS) is a surgical procedure described first by DeMeester and adapted to treat morbid obese patients by Hess and Marceau. Despite its good long term results, it is not a common procedure worldwide due to its complexity and high risk of complications. One of the most difficult steps is the duodenal dissection and the duodeno-ileal anastomosis.

Methods: Here we show our technique of the right gastric artery ligation and the duodeno-ileal anastomosis.

Results: The right gastric artery ligation at its origin does not compromise the blood supply to the duodenal stump or the anastomosis. This technical aspect favours a better mobilization of the proximal duodenum in order to achieve a non-tension duodeno-ileal anastomosis.

Conclusions: Duodenal switch is a complex procedure to perform by laparoscopy. This technical modification allows a tension-free anastomosis without compromising its blood supply.

VK.32 Laparoscopic Treatment of Sleeve Leak with Roux en Y Gastric Bypass

PRESENTER: M. Hussein¹

¹American University of Beirut MC, Surgery, Beirut 1107 2020- Lebanon

Introduction: Leak is one of the common complications of Laparoscopic Sleeve Gastrectomy that entail prolongation of Hospital stay, morbidity and even mortality. *Method:* We report the treatment of 6 cases of complicated leak post sleeve gastrectomy that failed all conservative measure to heal including stenting by Laparoscopic Roux En Y Gastric Bypass all were cured.

Results: The video will show the steps used to dissect the Gastroesophageal are identifying the leak and Roux En Y Gastric Bypass.

Conclusion: Sleeve Gastrectomy level can be handled by minimal invasive surgery in advanced centers in Bariatric surgery.

VK.33 Laparoscopic Gastric Bypass State of the Art Technique

PRESENTER: M. Hussein¹

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Introduction: Laparoscopic Gastric Bypass – State of the Art Technique.

Method: The current gold standard for the surgical management of Morbid Obesity is the Laparoscopic Roux-En-Y Gastric Bypass. The incidence of jejunojejunal stenosis is up to 2% in the literature.

Result: I report my experience at the American University of Beirut Medical Center of 463 patients. The last 200 cases of zero incidence of jejunojejunal Anastomosis by refinement of the technique and use of 2 EndoGIA 60mm side to side anastomosis and less than 2% incidence of gastric leak due to resuturing of all stapler line.

Conclusion: The Video demonstrates the potential to reduce steps, facilitate stapling, closure of defects and avoid anatomical confusion. Therefore, Laparoscopic Gastric Bypass after refinement of technique, is effective, safe with excellent weight loss and low morbidity and mortality, minimal discomfort and early return to normal activity.

VK.34 Lap Conversion of Mini Bypass to Roux en Y Gastric Bypass

PRESENTER: M. Hussein¹

¹American University of Beirut MC, Surgery, Beirut 1107 2020- Lebanon

Introduction: Each Bariatric procedure had its own complications and failures.

Method: I report my experience in 5 cases referred to the American University of Beirut Medical Center for the treatment of failed mini Bypass to Roux-En-Y Gastric Bypass using 5 trocars where release of adhesion and creation of pouch and the steps used for anastomosis.

Results: All patients did well with no complication.

Conclusion: Therefore, also conversion from a Bariatric procedure to another can be done safely with minimal morbidity if done in advanced centers experienced in bariatric procedures.

VK.35 Redo Operation in Failed LRYGBP

PRESENTER: A. Jamel Coelho¹

Co-authors: A. Porto Zaccaron¹, L. Machado Castro¹, S. Dias Polo¹, J. Ferreira Manso¹

¹Obesoprocto Center, Bariatric, Rio De Janeiro-Brazil

E.C.O., 39 years old, female, weight 123kg, height 1.57m, BMI 49.9, no comorbidities, was submitted to a LRYGBP in 2006 by another surgeon. She have had no complications in post-op, reached 81% of EWL. After 2010 she regained weight till April 2012, when she have seeked our team because her weight was already 101Kg, BMI 41.2. There weren't no major psychological problems. At the pre-op study, endoscopy has shown a pouch with 6 cm of length, gastrojejunostomosis of 50mm and a long blinded limb from gastrojejunostomosis ("candy-cane). Gastrografin hasn't revealed a dilated pouch and shown fast emptying. A redo-operation was schedule at 11/28/2012. The "candy-cane" and the gastrojejunostomosis was "sleeved", under a 32 bougie calibration and 5,5 cm length silastic band was placed due to fast pouch emptying. The post-op was uneventful and her weight at 03/01/2013 was 80,4Kg.

VK.36 Conversion of Sleeve Gastrectomy to LRYGBP

PRESENTER: A. Jamel Coelho¹

Co-authors: A. Porto Zaccaron¹, L. Machado Castro¹, S. Dias Polo¹, J. Ferreira Manso¹

¹Obesoprocto Center, Bariatric, Rio De Janeiro-Brazil

G.S.B., female, 28 years old, weight 130,7 Kg, height 1.72 m, BMI 44,1, after first consultation with our team with all explanation about advantages and potential results and complications of each techniques, she has chosen Sleeve gastrectomy. The operation was carried out with any unexpected

events with a 32 Fr bougie beginning 6 cm from pylorus with PDS 3.0 oversew along all the stapling line. The patient was discharged on POD 2 with clear liquids until POD 15. After two years the patient referred progressive food tolerance and a poor outcome with a weight of 108 kg (33% EWL). Endoscopy showed an enlarged sleeve. After informed consent, the conversion to RNYGBP was decided. The technique is detailed in the video.

VK.37 Conversion of a Banded Sleeve to a RYGB After Band Erosion

PRESENTER: M. Khaitan¹

¹Asian Bariatrics, Bariatric Surgery, Ahmedabad-India

A sleeve was performed as a first stage procedure in a female of BMI 78 with no co-morbidities. She was a known case of DVT with pulmonary Embolism 10 years back and has been on Warfarin prophylaxis for the same. A Fobi Band was applied on the sleeve. One month post operative, patient developed vomiting and pain in epigastrium. A Upper GI revealed a narrowing in the area of band. On exploration the band was found to be densely adhered to liver and the outer covering was broken with prolene visible. It was removed. Upper GI after removal was Normal. On post op day one of other surgery, it was found that there was leak. On laparoscopy there was a ishaemic perforation at the area of the band. A salvage RYGB was done. Patient did fine after that.

VK.38 Simplified Roux-en-Y Gastric Bypass

PRESENTER: L. De Carli¹

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Introduction: Roux-en-Y Gastric Bypass (RYGB) is the golden standard technique of bariatric procedures. It has excellent results as weight loss and comorbidities control. This technique, however, is a complex procedure to perform. Brazilian surgeons have created the Simplified RYGB, which is the simplification of the original technique in order to standardize its execution and reduce surgical time.

Objective: This video abstract intends to analyze the advantages of simplified technique over original RYGB.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by surgeons of CTO from 2004 to 2012.

Results: Simplified RYGB is performed mostly in the upper abdomen. After realize the gastric pouch, the surgeon performs the gastrojejunal anastomosis with intestinal loop brought from a distance of 150cm from the angle of Treitz and finally performs septation and intestinal anastomosis. The standardization of this technique has the advantages to reduce surgical time and maintaining the same excellent results as the original technique for weight loss and comorbidities control.

Conclusion: Simplified RYGB is a safe effective technique and has easier execution than the original procedure. This method provides excellent results regarding weight loss and control of comorbidities, and allows shorter surgical time.

VK.39 Revision Surgery for Failure of Roux en-Y Gastric Bypass

PRESENTER: A. Govil Bhasker¹

Co-authors: M. Lakdawala¹, A. Sood²

¹CODS and Saifee Hospital, Minimal Access and Bariatric Surgery, Mumbai-India

²CODS, Minimal Access and Bariatric Surgery, Mumbai-India

Background: Bariatrics is an evolving science. A procedure with low rate of complications, durable weight loss and adequate resolution of comorbidities can be considered as a gold standard procedure. Roux en Y gastric bypass was considered to be a gold standard procedure until recently. Off late there have been reports of weight regain after this procedure. Studies have also reported resurgence of type 2 diabetes after a few years of roux en y gastric bypass.

Causes of weight regain after roux en y gastric bypass include stomal dilatation, pouch dilatation, gastrogastic fistula and loss of malabsorption in due course.

Methods: Here we present three videos depicting pouch revision, revision of gastrojejunostomy and limb lengthening after roux en y gastric bypass.

1. Pouch revision: 52 year old lady underwent gastric bypass 10 years back. She presented to us with weight regain of almost 50% of her excess weight. Endoscopy and barium studies revealed a dilated gastric pouch. A laparoscopic pouch revision with a fresh gastro jejunal anastomosis was done for this patient.

2. Revision of gastrojejunostomy: 45 year old male patient underwent roux en y gastric bypass 5 years back returned to us with weight regain. Endoscopy and barium study revealed a normal pouch but a dilated gastrojejunostomy. Laparoscopic revision of gastrojejunostomy was done for this patient.

3. Limb lengthening: 48 year old female patient underwent gastric bypass 7 years ago. She presented with weight regain as well as resurgence of type 2 diabetes and dyslipidaemia. Barium studies and UGI endoscopy revealed a normal stomal diameter and pouch size. Laparoscopic lengthening of the alimentary limb was done with a 150 cm common channel length.

Conclusion: Weight regain after gastric bypass is a complex issue and complete evaluation by a nutritionist, psychologist and a surgeon are must. Surgical options such as revision of dilated pouch, revision of gastrojejunostomy and limb lengthening must be considered wherever indicated. Holistic management by a multidisciplinary team is essential for best results.

VK.40 Laparoscopic Gastrojejunal Sleeve in Roux-en-Y Gastric Bypass: Intraoperative Detour

PRESENTER: D. Brink¹

Co-authors: K. O'Connor², M. Kurian³

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³NYU School of Medicine, Surgery, New York-United States

A 58 yo female presents 10 years after laparoscopic Roux-en-Y gastric bypass with recidivism and morbid obesity. She had the Roux-en-Y in 2003. She was seen again 2008 for bowel obstruction and underwent laparoscopic adhesiolysis. Patient presented again 2011 with 33 lb weight gain and again in 2013 with 65 lb weight gain. Her BMI at that time was 42. She also had severe back pain, spinal stenosis and hiatal hernia. She was scheduled for a hiatal hernia repair and gastrojejunal sleeve.

Laparoscopic exploration showed a surprising finding. The blind limb of the gastrojejunostomy was medial to the Roux limb.

In 2003, the gastrojejunostomy was created with a circular stapler. The operative plan was to fire a stapler across the gastrojejunostomy up to the angle of His. With the medial position of the blind limb, the operative plan was adjusted. The blood supply to the roux limb and the gastric pouch have to be carefully preserved with the gastrojejunal sleeve. The video shows the steps to "sleeve" the gastrojejunostomy and pouch with a medial presentation of the blind limb of the jejunum. A repair of the hiatal hernia is also shown.

VK.41 Revision Bariatric Surgery: RYGB

PRESENTER: D. Dhorepatil¹

Co-authors: D. Vibhute¹, D. Bhoge¹

¹Shree Hospital, Bariatric Surgery, PUNE-India

Patient with 195 KGS & BMI 62 kg/sq.M underwent laparoscopic RNY gastric Bypass years ago. In next 3 years he lost 88kgs & achieved the BMI of 35kg/sq.M & resolution of OSA. Then onwards he started gaining weight. His present BMI was 45 with weight of 140kgs. The Upper GI studies revealed Pouch dilatation & stoma dilatation. He was advised revision surgery for gastric pouch & stoma. The sleeving of pouch & reduction of stoma diameter was done laparoscopically. The sleeve was performed over the No. 26 oesophageal bougie. Surgery was uneventful. He started losing weight post operatively similar to sleeve gastrectomy.

VK.42 Surgical Technique of Banded Sleeve Gastrectomy

PRESENTER: M. Bhandari¹

¹SAIMS, Metabolic & Bariatric Surgery, Indore-India

Sleeve gastrectomy is gaining acceptance as a stand alone procedure throughout the world. With the initial results of a sleeve gastrectomy very promising there will be still be dilatation of the sleeve in most cases with years to come as has happened in a gastric bypass. We hereby present our technique of banding a sleeve gastrectomy with a Gabp ring.

VK.43 Laparoscopic Sleeve Gastrectomy State of the Art Technique

PRESENTER: M. Hussein¹

¹American University of Beirut MC, Surgery, Beirut 1107 2020-Lebanon

Introduction: Laparoscopic Sleeve Gastrectomy

Method: Through 4 trocars in the different quadrants of the abdomen and the patient placed in semi sitting position and the surgeon is between the legs of the patient. The first step is to create a window in the lesser sac 6cm from the pylorus at the greater curvature. The stomach resection is done after introduction of 36 French catheter using 3 cartilage of Endo GIA Green 60mm cartilage until the fundus where another 3 cartilage of Endo GIA blue 60mm cartilage used to complete the Gastric resection till the angle of HIS which is dissected retrogastric. The suture line was reinforced by a continuous layer of 2-0 prolene suture and using the methylene blue test for detection of leak.

The last step is the division of the gastric omentum from the resected stomach using ligasure or ultracision and the resected gastric segment is removed from one of the trocars after extending of the incision to 2cm.

Results: The first 120 cases done by this technique had zero mortality and one single leak treated by percutaneous drainage and 99% of the cases discharged within 48 hours.

The whole procedure took less than 40 minutes. The excess weight loss in 1 year is 70%.

Conclusion: Therefore, this new technique preserves the blood supply to the remaining stomach and prevents tension at the suture line with no mortality, minimal morbidity, minimal discomfort and early return to normal activities.

VK.44 Laparoscopic Conversion of Sleeve Gastrectomy to Roux En Y Gastric Bypass

PRESENTER: M. Hussein¹

¹American University of Beirut MC, Surgery, Beirut 1107 2020- Lebanon

Introduction: Each Bariatric procedure had its own complications and failures. I report my experience at the American University of Beirut Medical Center for the treatment of failed Lap Sleeve Gastrectomy referred to our center by Lap Roux-en-Y Gastric Bypass.

Method: The number of cases done is ten cases. Through 5 trocars release of adhesions, creation of small pouch and the steps used for anastomosis are well demonstrated in this video.

Results: All patients did well with no complications.

Conclusion: Therefore, also conversion from one bariatric procedure to another had more incidence of complication but if done in advanced laparoscopic centers experienced in bariatric procedures is safer and reproducible.

VK.45 A Different (Easier) Approach to the Dissection of the Greater Curvature in Laparoscopic Sleeve Gastrectomy

PRESENTER: M. Alamo¹

Co-author: M. Sepulveda²

¹Hospital Dipreca, Surgery, Santiago-Chile

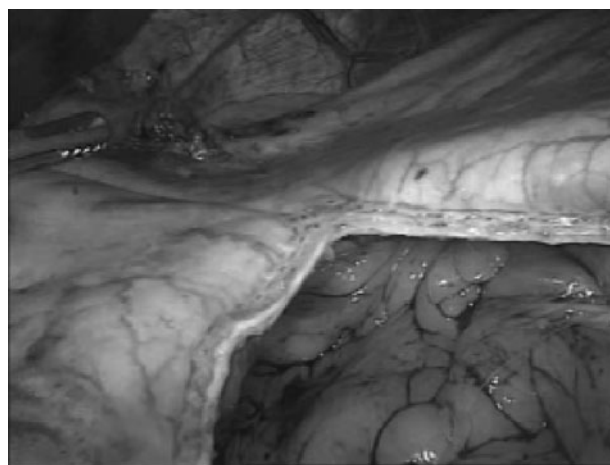
²Hospital Dipreca, Bariatric Surgery, Santiago-Chile

This video is about another, and most of the times, easier way to dissect the greater curvature of the stomach. It consists in dissecting only the gastric fundus by sectioning the short vessels. This is continued until the complete dissection of the left crus.

Then, an aperture of the greater curvature is made to access the omental sac. The dissection involves only the distal third of the greater curvature until pylorus. This way the greater omentum preserves its attachments and prevents the stomach to fold itself towards the lesser curvature (see figure).

Insertion of the boogie is easier.

After the two first fires of the stapler, the assistant can easily stretch the stomach preventing folding of the posterior wall of the stomach. This way there is a little risk of leaving too much posterior wall and therefore to compromise the long term results of the surgery. Also, the next fires of the stapler are performed more easily.



VK.46 Laparoscopic Resleeve Gastrectomy as a Revisional Procedure for Failed Laparoscopic Gastric Sleeve Surgery

PRESENTER: R. Sadek¹

Co-authors: A. Wassef²

¹Robert Wood Johnson, Surgery, Somerset-United States

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Introduction: Laparoscopic sleeve gastrectomy is one of the most commonly done bariatric surgery procedures done now days. The rate of success for this procedure has been reported to range from 60–70 %. Revision surgery for Sleeve gastrectomy has been typically Gastric bypass. We present 4 cases of Resleeving patients who initially underwent Laparoscopic Sleeve Gastrectomy and regained some weight back.

Methods: Patients who regained their weight back after Laparoscopic sleeve Gastrectomy have been evaluated with an UGI study and an Upper endoscopy. All Four (4) patients had a dilated fundus and antrum with a narrow body of sleeve. Dumbbell shaped sleeve. All patients underwent Laparoscopic resleeve surgery.

Results: All procedures were concluded laparoscopically. No complications were noted. The patients started their weight loss process again and continued to experience better control of their appetite and cravings.

Conclusions: Resleeveing of failed Laparoscopic Gastric sleeve surgery is feasible with good safety margin and good long term results.

VK.47 Reducing the Incidence and Severity of Leak After Sleeve Gastrectomy: The Omental Patch Technique

PRESENTER: C. Taylor¹

¹Mater Hospital Sydney, Surgery, Sydney-Australia

Introduction: Leak after laparoscopic sleeve gastrectomy is a serious and potentially lethal complication, and notoriously difficult to manage. Most leaks involve the proximal staple line. We present an omental patch technique which may help reduce both the incidence and severity of leak. Omentum is well known for its ability to wall off abdominal sepsis, and can be used to repair peptic perforations. We believe it may also be of value in the prevention of staple line leak.

Methods: After completing the stapling stage, a suitable tongue of greater omentum is fixed to the right crus anterior to the gastric sleeve by absorbable suture. A second absorbable mattress stitch is then placed between the omentum and the left crus posterior to the gastric sleeve, resulting in a snug omental patch over the proximal corner of staple line.

Results: 700 sleeve gastrectomies were performed using this technique. Only 2 leaks occurred. (0.28%). Both patients had small contained leaks which resolved quickly without the need for reoperation, prolonged admission, or intensive care.

Conclusion: Prophylactic omental patching of the proximal staple line may reduce both the incidence and severity of leak after sleeve gastrectomy and is quick and simple to perform.

VK.48 Minimising GORD After Sleeve Gastrectomy; 3 Key Technical Principles

PRESENTER: C. Taylor¹

¹Mater Hospital Sydney, Surgery, Crows Nest-Australia

Introduction: Gastro-oesophageal reflux disease (GORD) is a significant complication of sleeve gastrectomy, with an incidence of up to 30%. Treatment with long term antacid therapy may be required, and conversion to Roux-Y Gastric Bypass may be needed in severe cases. We present 3 key technical principles in the performance of sleeve gastrectomy that, in our experience, is associated with a low incidence of post-operative GORD.

Method: The three key technical principles are:

1. Routine repair of any hiatal weakness or herniation
2. Complete resection of the fundus to avoid retaining any posterior pouch
3. Preserve sufficient width at the angular incisura to avoid structuring

Results: 700 consecutive sleeve gastrectomies were performed according to the principles above. When questioned at 6 post-operative months, the incidence of symptomatic heartburn or regurgitation was just 6.3%. Treatment with proton pump inhibition was sufficient in all cases, with no patients requiring conversion to bypass.

Conclusion: With appropriate technique, GORD after sleeve gastrectomy can be minimal.

VK.49 Revision Bariatric Surgery: VBG to LSG

PRESENTER: D. Dhorepatil¹

Co-authors: D. Vibhute¹, D. Bhoge¹

¹Shree Hospital, Bariatric Surgery, Pune-India

Patient with Bmi of 41 kgs/sq.M underwent open Vertical Banded Gastroplasty & achieved the weight loss of 70% EW to have BMI of 30 kgs/ sq.M. within the first 2 years of surgery. In next 10 years he started regaining weight but slowly. After completion of 10 years of first surgery he reached to have BMI OF 37 kgs./sq.M & newly developed diabetes. He was advised RYGB but opted for Lpa. sleeve Gastrectomy. His VBG stoma band was released & sleeve gastrectomy was performed by resecting dilated VBG Pouch & taking out the fundus completely. There were multiple adhesions but procedure was completed as standard LSG.

VK.50 'Stenting the Complication of Stent' for Leak After Sleeve Gastrectomy

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Introduction: Use of stent is being accepted for early leaks after sleeve gastrectomy. Failures of control of leakage, or slippage, pain, reflux or vomiting are the common complications seen. This case presents a unique complication of the stent used for the control of leak after sleeve gastrectomy.

Materials and Methods: 43 years old lady with BMI 47 underwent laparoscopic sleeve gastrectomy. She has developed a leak and peritonitis 48 hours after surgery. Laparoscopy and drainage was performed followed by endoscopy with the placement of 15 cms removable stent at the same time. The leak sealed but she presented with severe pain again on day 19 after the stent placement.

Summary: The video demonstrates a rare complication of stent which was again treated by another stent.

VK.51 Technical Tips for Sleeve Gastrectomy with One Layer of Buttressing Material

PRESENTER: H. Coñoman¹

Co-authors: C. Guixé¹, F. Delgadillo², I. Valle¹

¹Cencolap, Bariatric Surgery, Santiago-Chile

²Cencolap, Surgery, Santiago -Chile

Introduction: Gastric leak and hemorrhage are the most important challenges after laparoscopic sleeve gastrectomy (SG). In order to reduce these complications, the staple line can be reinforced with buttressing material.

Objective: The aim of this video is to present our experience in the realization of SG in obese patients with one layer of buttressing material and show the technical tips for correct use of the one layer of Gore Seamguard and avoid mistakes in this technique.

Methods: The video presentation of one selected patient who underwent SG with buttressing material and edited for showing the tips to correct use of one layer Gore Seamguard.

Conclusions: SG is a safe and effective treatment for obesity. The staple line reinforced with one layer of buttressing material diminish the rate of bleeding and leaks and may be less time consuming.

VK.52 One Year Follow Up of Single-Site Laparoscopic Sleeve Gastrectomy

PRESENTER: M. Pawlak¹

Co-author: M. Michalik¹

¹Ceynowa Hospital, General and Vascular Surgery, Wejherowo-Poland

Aim: The laparoscopic bariatric surgeries are widely accepted for treating obesity, furthermore there are many studies which shows the superiority of

sleeve gastrectomy over the other bariatric procedures. At present we have reached the next stage of evolution in laparoscopy and hence also in the bariatrics, the single-site surgery. The aim of this study is to present the transumbilical single-site laparoscopic sleeve gastrectomy with a one year follow up of a patient.

Method: The patient is a 34-years old female with BMI of 34 kg/m² and no comorbidities. A single intraumbilical 25mm-incision was made and the QuadriPort (Olympus) was inserted to the abdominal cavity. Additionally the 5mm-trocar was inserted in the right subcostal region for the liver retraction and as a drain outlet. The Sleeve Gastrectomy was performed in the same technique as in typical laparoscopy. The methylene blue test was performed during the operation as well as radiologic study with liquid barium sulphate on postoperative day 2 for the leakage and gastric capacity assessment.

The follow up lasted for one year and consisted of three control visits.

Results: The procedure was completed successfully without any perioperative and postoperative complications. Total operative time was 45 min. Hospital stay was 4 days. After one year our patient reached 62 % EWL, the umbilical scar is not visible and subcostal scar is minimal, not noticeable.

Conclusion: The Transumbilical Laparoscopic Sleeve Gastrectomy is both safe and feasible, it improves cosmetic results and more importantly reduces postoperative pain and trauma.

VK.53 Safe Sleeve Gastrectomy Our Modified Technique

PRESENTER: R. Goel¹

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Introduction: Lap Sleeve Gastrectomy has made it extremely popular amongst surgeons & obese as well. However, it is associated with higher (1%-2%) leak rate with catastrophic implications to the patient & family. This complication unsettles a bariatric program & despite numbers most of the busy centers too report leaks on regular basis. Most of the time review of surgical video does not reveal the cause of leak which is usually attributed to ischaemia, infection or iatrogenic injury.

Method: We modified sleeve Gastrectomy technique 3 years back by using a combination of stapling, over-sewing, use of fibrin glue & omentopexy. This marginally increases surgical time from 35 minutes to 90 minutes. This also requires additional surgical skills in suturing with long needle holders.

Results: Since we started using this technique we have been able to achieve 0% leak rate in over 500 consecutive sleeve surgeries in last 3 years. This is also associated with expected weight loss, minimal re-operation rate and 0% mortality too. No other complication like volvulus, leak, ischaemia & stricture was seen in these patients.

Conclusion: A predictable safe outcome can be achieved in a sleeve gastrectomy through our modified sleeve gastrectomy. This technique neither increases the cost of surgery substantially & requires level of surgical skills usually available with most of the bariatric surgeons.

VK.54 Ergonomics of Sleeve Gastrectomy: Safer Technique with Good Outcome

PRESENTER: R. Bhojwani¹

¹Santokba Durlabhji Memorial Hospital, Surgical Gastroenterology, Jaipur-India

Introduction: Sleeve gastrectomy is conventionally performed by the surgeon standing on the right side of the patient and using different ports for firing the staplers with varying degrees of articulation. A different ergonomic arrangement can simplify the procedure.

Methods: Sleeve gastrectomy was performed by the surgeon standing between the legs using only the umbilical port for firing the staplers. All the

stapling was performed along an angulated straight line, giving the sleeve, a configuration of an inverted hockey stick. The camera was shifted from the umbilical port to the left sided port, which gives better visualisation of the stomach while it is flipped to examine the staple line on the anterior and posterior gastric wall. No reinforcements or oversewing was used. A video will be used to depict the important details of the procedure.

Results: A total of 172 sleeve gastrectomies were fashioned over a 34 F bougie with the described method over three years duration. The mean duration of the operation was 55 minutes. All the landmarks were categorically seen during every procedure. The BMI of the patients ranged from 33 to 67. No leaks were seen. 2 patients had significant reflux in the postoperative months.

Conclusion: Ergonomics as described, make the procedure easier, and may be a reason for precise stapling and a good outcome.

VK.55 Sleeve Gastrectomy and Crural Repair in Obese Patients with Gastroesophageal Reflux Disease and or Hiatal Hernia

PRESENTER: A. Sood¹

Co-authors: A. Bhaskar¹, M. Lakdawala¹

¹Cods And Saifee Hospital, Minimal Access, Bariatric and Metabolic Surgery, Moga-India

Introduction: Gastroesophageal reflux disease (GERD) with or without hiatal hernia (HH) is now recognized as an obesity-related co-morbidity. Roux-en-Y gastric bypass has been proved to be the most effective bariatric procedure for the treatment of morbidly obese patients with GERD and/or HH. In contrast, the indication for laparoscopic sleeve gastrectomy (SG) in these patients is still debated. Our objective was to report our experience with patients who underwent SG and HH repair (HHR).

Method: Standard 5 port technique was used for LSG. Crural dissection was performed in all cases. Left crus was identified followed by right crus. Mobilisation of lower Esophagus from the medial borders of both crura done. The Gastric tube (36 fr) was withdrawn to access the gap in the posterior crura. Posterior cruroplasty was done with 2-0 prolene (box stitch). Subsequently the passage of gastric tube was noted in to the stomach without any hold up at the site of posterior cruroplasty. The clinical outcome was evaluated considering GERD symptom resolution or improvement, interruption of antireflux medications, and radiographic evidence of reflux.

Result: Operating time was 45 minutes and the blood loss was 25 ml. patient had an uneventful recovery and no symptoms of GERD post operatively.

Conclusion: Small hiatal defects can be underdiagnosed at preoperative endoscopy and/or upper gastrointestinal contrast study. A careful examination of the crura is recommended intraoperatively. SG with crural repair is feasible, safe, and provides good management of GERD in obese patients with mild symptoms of reflux.

VK.56 Sleeve Gastrectomy as Revisional Procedure for Failed Gastric Banding

PRESENTER: A. Sood¹

Co-authors: A. Bhaskar¹, M. Lakdawala¹

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is considered an effective multipurpose operation for morbid obesity. Here we report our result of LSG as a revisional procedure for inadequate weight loss and/or complications after adjustable gastric banding. This video demonstrates the technique of concomitant laparoscopic band removal followed by LSG.

Method: This patient presented with inadequate weight loss 5 years after LGB. The LSG was done using a 36 Fr bougie with an endostapler, after

removing the laparoscopic adjustable gastric band and complete removal of capsule. The sleeve was fashioned with green stapler. A 16 F drainage tube was kept near the upper end of sleeve. An upper gastrointestinal contrast study was performed on next day and clear liquid was commenced. Drain was removed after 2 weeks.

Result: Operating time was 120 minutes and the blood loss was 70 ml. Patient had an uneventful recovery and lost 12 Kg in the next 2 months.

Conclusion: In this case LSG was effective as a revisional procedure for failed LAGB. Removal of pseudo capsule along with the previous band is imperative to minimize leak post revisional surgery.

VK.57 Gastric Sleeve in Patient with Giant Gastric Diverticulum

PRESENTER: P. Omelanczuk¹

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Introduction: We present a 69-year-old female patient with morbid obesity antecedent, BMI 44 and gastric diverticulum diagnosed by endoscopy. Due to this diagnosis a sleeve gastrectomy was decided.

Contents Description: Patient in dorsal decubitus in the French position, under general anesthesia with compression stockings. Patient fixation. Access to abdominal cavity, semiology it was observed stomach with gastric fundus diverticulum. Harmonic scalpel section of left gastrophrenic ligament with localization of left pillar. Pars flaccida

section and right pillar dissection. Sleeve gastrectomy using 5 60-mm Echelon cartridges for mechanical suture. Continuous invaginating suture stitches with PDS 3.0. Hemostasis control. Bed drainage. Stomach extraction through paraumbilical trocar. Access closure.

Observations And/Or Comments: Patient with favorable evolution. Medical discharge: 48hs. It was decided to present this case since gastric diverticulum in a morbidly obese patient submitted for Gastric Sleeve is not a frequent finding.

VK.58 Anti-Reflux Sleeve Gastrectomy

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Background: Sleeve Gastrectomy (SG) became a frequent bariatric surgery but some patients may develop gastroesophageal reflux (GER) symptoms or have them worsened, especially in those that present hiatal hernias.

Video: Under laparoscopy, the fat pad that covers the His Angle is excised. Dissection starts beside the gastric greater curvature, going up to the Angle of His, releasing completely the gastric fundus and exposing the left arm of the diaphragmatic esophageic hiatus. The right arm of the hiatus is also dissected and exposed. The esophagus is isolated around a Penrose drain. A Fouchet's tube is passed to the stomach. A hiatoplasty is performed as usual correcting a hiatal hernia. A small gastric plication is created around the EG junction involving 180 degrees of the left aspect of the esophagus, therefore very little of the gastric fundus was used to create the plication. It protects the sling fibers of the lower esophageal sphincter and quite maintains de His angle. The Sleeve gastrectomy is then performed, sparing the plication, but removing most of the gastric fundus.

Results: This case presented in the video, as well as other 88 that received this type of anti-reflux sleeve gastrectomy presented a major improvement or resolution of GER symptoms. This type of anti-reflux SG provoked weight loss that was not statistically different than the usual SG.

Conclusion: The hiatoplasty and a small 180° left plication before the SG protects from GER without compromising weight loss.

VK.59 Sleeve Gastrectomy Four-Trocars Standard Technique

PRESENTER: A. Sasso Fin¹

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The video shows a technique of sleeve gastrectomy held by video laparoscopy and the surgical times more important as follows:

The four-trocars (2 trocars 5 mm and 2 trocars 10–12 mm) technique is used, with the surgeon standing between the legs patient.

The division of the gastric greater curvature's vascular supply is performed with the use of the ACE 36Z (ULTRA CISION) from the pylorus until the Hiss angle level.

After the insertion of 32-Fr boogie, the stomach is vertically divided along the lesser curvature with the use of the Echelon 60 Flex stapling device, starting at about 4 cm from the pylorus and continuing until at the level of angle of his.

The resection includes all portion of stomach and a part of cardia to allow reconstruction of the valve mechanism at this level, to prevent gastro esophageal reflux. Invaginating suture is used for reinforce the whole staple line starting from the last firing of staple going caudal until the level of the antrum, the PDS 3.0 is used. The methylene blue test is always performed to screen for staple line leak. The drainage is only used in the event of positive intra-operative methylene blue test or intra-operative bleeding, in this video there is no drain. The stomach is removed through the abdominal wall. The cardia endoscopic aspect after the surgery is demonstrated, showing the integrity of the orifice mechanism.

VK.60 Gastric Sleeve in Patient with Giant Hiatal Hernia

PRESENTER: P. Omelanczuk¹

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Introduction: We present a 48-year-old male patient with morbid obesity antecedent, BMI 44 and giant hiatal hernia. Due to this diagnosis reparation of hiatal hernia and bariatric surgery was decided.

Contents Description: Patient in dorsal decubitus in the French position, under general anesthesia with compression stockings. Patient fixation. Access to abdominal cavity, semiology it was observed giant hiatal hernia with stomach displacement towards mediastinum Harmonic scalpel section of left gastrophrenic ligament with localization of left pillar. Pars flaccida section and right pillar dissection. Meticulous liberation of mediastinum adhesences to liberate gastric fundus and visualize noble parts. The hernia is reduced and esophageal hiatus in anterior portion closed with separate stitches Endostich 3.0. Sleeve gastrectomy using 5 60-mm Echelon cartridges for mechanical suture. Continuous invaginating suture stitches with PDS 3.0. Hemostasis control. Bed drainage. Stomach extraction through paraumbilical trocar. Access closure.

Observations And/Or Comments: Patient with favorable evolution. Medical discharge: 48hs. It was decided to present this case due to the well grounded controversy as regards hiatal hernia patients, bariatric surgery indicated is gastric bypass, since it presents less incidence of GER in postoperative. We present the grounds for our operative decision and the evolution of the patient.

VK.61 Laparoscopic Sleeve Gastrectomy After Gastric Bypass for Inadequate Weight Loss

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Introduction: Efficacy of Gastric bypass depends on multiple factors such as small pouch, stomal size in gastro jejunostomy, length of small bowel bypassed (alimentary limb). Pouch dilatation, with subsequent loss of restrictive function, widening of GJ and adaptation of alimentary limb to absorptive function remains the most common cause for weight regain after Gastric Bypass. Sleeve gastrectomy, conversion to a Banded Gastric Bypass or increasing the length of alimentary limb can be considered as options for a revision in case of weight regain after RYGB.

Method: 34 year old male patient with a weight of 198 Kg and BMI of 61.7 Kg/m² underwent laparoscopic Gastric Bypass in 2006. He lost 25 kg and came down to 173 kg and BMI of 54.2kg/m² at the end of one year. Subsequently he started to put on weight and reached to 184 kg with BMI of 57.5kg/m² in 2012. He underwent conversion of RYGB to LSG in oct 2012. At 3 months of follow up he has come down to 163kg with BMI of 50.1kg/m². Gastro gastrostomy was done with 21 mm circular stapler. Subsequently LSG was done over 36 f bougie. Around 200 cm of alimentary limb was excised.

Result: Operating time was 150 minutes and the blood loss was 75 ml. patient had an uneventful recovery and lost 21 Kg in the next 3 months.

Conclusion: Sleeve can be considered as a feasible option for further weight loss in patients with previous RYGB with inadequate weight loss.

VK.62 Sleeve Gastrectomy: How to Avoid Surgical Complications

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Sleeve gastrectomy is the most common restrictive technique actually. In order to prevent medium and long term complications such as fistulas, torsion, vomiting, bleeding and weight gain, we present a video that shows how to perform a narrow tube but enough by placing orogastric catheter and subsequent lineal stapling. How to prevent fistulas in the Hiss angle by choosing the point of section and invagination of the staple line, thus avoiding bleeding of the section line. To avoid twisting, stenosis and vomiting, fixing and anchoring the gastric tube with the gastro-splenic omentum along the section line. The weight gain is related to the diameter of the gastric tube light, which is reduced by using a 16 Fr catheter and invagination of the section line with the tube in place. All technical details are presented in a 6 minutes video.

VK.63 Technical Aspects of Laparoscopic Sleeve Gastrectomy with a Marking Line to Decrease Complications

PRESENTER: A. Kaul¹

Co-authors: B. Togbe¹, P. Hunjan¹, A. Maffei¹, T. Cerabona¹

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Aim of this video presentation is to highlight our technique used in a series of over 800 consecutive laparoscopic sleeve gastrectomy done at a teaching center and to highlight the fact that both teaching and good results in bariatric surgery can go hand in hand.

Technique was refined over a 9 year period from 2003 till December 2012.

Our technique utilizes initial greater curvature dissection, thorough hiatal exposure and a 38 French bougie for sizing and reinforcing entire staple line with a running absorbable stitch. Unique features of the sleeve creation is use of a marking a line to better guide staple placement, technique to gently guide the bougie by stomach manipulation rather than bougie manipulation, use of stitch in the fundus to decrease postoperative reflux and an antral stitch to decrease stomach kinking.

In our series in the last 200 cases the mean age was 44.2 years, BMI was 47.9 kg/m². The excess % BMI lost at 1 year was 30.7%, % EWL at 1 year was

61%. There was significant reduction at 1 year of comorbidities (sleep apnea 91%, Hyperlipidemia 63%, Hypertension 39%, DM 59%) while there was only a slight increase in postoperative GERD symptoms.

Our video will show our technique with special emphasis to demonstrate tips and tricks to decrease complications and is a technique which can be learned by fellows during training.

VK.64 Laparoscopic Resection of the Blind Limb with Pouch Revision and Placement of Pericardial Patch for Weight Regain

PRESENTER: M. Jawad¹

Co-authors: R. Moon¹, M. Goldbach², A. Teixeira¹

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Introduction: 39 year old female with history of Roux-en-Y gastric bypass in 2007 had complaints of constant LUQ abdominal pain, hunger and weight gain. Upper GI revealed dilated anastomosis with blind loop functioning as a residual stomach.

Materials and Methods: A Veress needle was inserted and abdomen was insufflated. Trocars were inserted. Visualization of abdominal cavity revealed right upper quadrant adhesions between the left lobe of the liver and the pouch. The left lobe of the liver was separated from the pouch and gastrojejunostomy via sharp dissection. Adhesions around the blind limb were released and the mesentery of the blind limb was transected. An Edlich tube was inserted in the pouch and directed toward the antrum. Dissection of the pouch revealed a large hiatal hernia, and the fundus was dissected off the hiatus. Transection was carried out from the blind limb of the jejunum close to the gastrojejunostomy and extended superiorly to transect the fundus of the stomach. The staple line was then oversewn with 2–0 Polysorb. A 0.8 x 8cm pericardial patch was placed around the pouch proximal to the gastrojejunostomy, and was sutured at 7cm with 2–0 Ethibond above the anastomosis.

Result: On POD #1 an upper GI was performed revealing no postoperative leak. Patient tolerated clear liquid diet without issues and was discharged home.

Conclusion: Anastomotic dilatation after Roux-en-Y gastric bypass can be corrected with laparoscopic revision in an elective manner with minimal post operative hospital stay.

VK.65 Laparoscopic Imbrication of Sleeve Gastrectomy for Weight Regain and Repair of Hiatal Hernia

PRESENTER: M. Jawad¹

Co-authors: A. Teixeira¹, R. Moon¹

¹Orlando Regional Medical Center, Department of Bariatric Surgery, Orlando-United States

Introduction: 53 year old female status post sleeve gastrectomy had issues with gastroesophageal reflux and weight regain. Patient had an upper GI study that revealed an approximately 4 cm hiatal hernia with reflux and a dilated sleeve.

Materials and Methods: Veress needle was inserted in the left upper quadrant, the abdomen was insufflated, and six trocars were inserted. Visualization of the abdominal cavity revealed extensive adhesions in right upper quadrant and pelvic area. Left lobe of the liver was retracted anteriorly. Adhesions to the stomach were taken down. All the adhesions around the crura were released and the peritoneum over the right crura was incised and dissected, the hiatal hernia was reduced. The esophagus was freed from all the adhesions. The hiatus behind the esophagus was repaired with 2 interrupted stitch with 2–0 Ethibond.

The stomach was imbricated on top of the Edlich tube with interrupted stitch of 2–0 Ethibond and also a running stitch of 2–0 Ethibond.

Result: Postoperatively the patient did well, UGI and methylene blue test were negative on POD # 1, and she went home on POD # 2 on full liquid diet. Patient showed a drop of 10.4 kg at a 6 month follow up.

Conclusion: Sleeve gastrectomy creates a high pressure system that can make GERD unbearable for patients with hiatal hernia and incompetent lower esophageal sphincters. Plication of the sleeve can be an option for weight regain due to dilated sleeve.

VK.66 Minimally Invasive Implantation Technique for Abiliti Closed Loop Gastric Electrical Stimulation System

PRESENTER: T. Horbach¹

Co-authors: F. Eschenbacher¹, S. Krüger¹

¹Stadtkrankenhaus Schwabach, Obesity Control Center, Schwabach- Germany

Introduction: Demonstrate the safety of the minimally invasive implantation technique of the transgastric sensor and efficacy of a new gastric electrical stimulation (GES) system for the treatment of obesity.

Method: 34 subjects with a BMI of 35–55 kg/m² were implanted with the abiliti system and treated with gastric electrical stimulation during one year. The outcomes were the safety of the transgastric implant, the efficacy of the therapy on weight loss, obesity related co-morbidities and improvement in eating and exercise behavior and quality of life at 12 months. The video illustrates the safety and simplicity of the operative procedure. Patient placement, port positioning, preparation of the implant, implantation of the transgastric sensor and stimulation electrode on the lesser curve are shown in detail. Furthermore the video demonstrates the creation of the subcutaneous pocket for the stimulator and the intraoperative testing of the system.

Results: The transgastric implant controlled by endoscopy was stable for all subjects. At 12 months the mean excess weight loss was 28.7% (95%CI, 34.5% to 22.5%), the mean reduction in weight was 13.1kg (95%CI, 16.1 to 9.9kg) and mean reduction in BMI was 4.8±3.2kg/m². No serious adverse event occurred during the follow up.

Conclusion: This prospective study confirms the safety and efficacy of the abiliti system in the treatment of obesity. The abiliti system is designed to fill a gap in the existing range of obesity therapies by providing therapy aimed at producing permanent change in subjects' behavior without permanent non-reversible changes in gastrointestinal tract.

VK.67 The Laparoscopic Technique of Revision from Silastic Ring Vertical Gastroplasty (SRVG) to Roux-en-Y Gastric Bypass

PRESENTER: H. Spivak¹

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While all revision procedures are challenging, one in particular stands out in its difficulty. The silastic ring vertical gastroplasty (SRVG) revision to gastric bypass is a complicated procedure due to previous adhesions, the old staple line and the silastic ring that is often eroded through the gastric wall. In this video we outline the laparoscopic technique for such a revision using examples from three different cases.

VK.68 Laparoscopic Bariatric Surgery in Sitting Position is Comparable to Robotic Surgery

PRESENTER: M. Hussein¹

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Introduction: The advantages of Robotic surgery is the ability to do surgery in sitting position and 3D view and the ergonomic of movement and third hand assistance but the disadvantages is one field surgery, the presence of a second surgeon in the field, extra expenses, the elongated time and absence of tactile sensation.

Method: I report my experience in the field of Laparoscopic surgery at the American University of Beirut Medical Center where I shifted all laparoscopic procedures including Bariatric procedures to sitting position with 100% completion of the procedures in the first 100 cases. The advantage is tremendous including multiple field surgery, reduced time and the ability to do a long list surgery with absence of muscle fatigue, back and knee pain.

Results: The video will illustrate the steps used to complete the procedure in sitting position.

Conclusion: Therefore, laparoscopic surgery is feasible in the sitting position and comparable to Robotic surgery.

VK.69 Sleeve Gastrectomy with Jejunal Bypass. A More Physiological Surgical Alternative to Roux-en-Y Gastric Bypass (Video)

PRESENTER: M. Alamo¹

Co-author: M. Sepulveda¹

¹Hospital Dipreca, Bariatric Surgery, Santiago-Chile

Introduction: In 2004 a new restrictive and hormonal surgical technique was created, the Sleeve Gastrectomy with Jejunal Bypass (SGJB). The objective is to present the surgical technique, an alternative in results to Roux-en-Y Gastric Bypass.

Surgical technique: Surgery was undertaken via laparoscopy. A standard six-port technique was used (three 5 mm, three 10 mm) after insufflation of CO₂ through a Veress needle to 15 mmHg.

Sleeve gastrectomy: The short gastric vessels were ligated using the Harmonic Ace device (Ethicon Endo-Surgery Inc, Cincinnati, OH). Dissection of the greater omentum 2 cm proximal to the pylorus allowed the first firing of a linear stapler (Echelon 60 mm, Ethicon Endo-Surgery Inc, Cincinnati, OH). Further firings of the linear stapler were used to divide the stomach longitudinally, from the antrum to the angle of His. Concurrently, the anesthesiologist inserted a 36-French orogastric tube to guide the gastric division. A 2–0 absorbable monofilament (Monocryl) invaginating running suture was placed to reinforce the staple line.

Jejunal Bypass: The jejunum was divided with a white cartridge of the linear stapler 20–40 cm distal to the ligament of Treitz, depending on the mobility of the mesentery. An enteroenterostomy (jejunoileal anastomosis) was performed 300 cm distal to the location of the jejunal division using the same cartridge and stapler, ensuring at least 200 cm of absorptive bowel. The bowel defect was closed with a 3–0 multifilament absorbable (Vicryl) running suture. The mesenteric defect was closed in the same way.

VK.70 Splenic Bleed, a Well Known Intraoperative Complication of Gastric Bypass and Gastric Sleeve. How We Manage It Conservatively: Video

PRESENTER: F. Villa¹

Co-authors: A. Góralczyk¹, K. Mannur¹

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Introduction: Bleeds from the splenic bed are a well known intraoperative complication in bariatric surgery. Though it is most likely to happen in very higher BMI patients with a large abdominal girth and thick and enlarged liver with a difficult visibility at the splenic hilum, it can occur in patients with a very very short gastric vessels, with hardly a space in between the stomach and the spleen. In the hands of an experienced

surgeon it is rarely a life threatening situation but can be at times tedious and time consuming to manage. Our technique involves an accurate dissection of the fundus and precardial fat pad and as a consequence we have collected a series of videos describing the way we manage splenic bleeds. In our experience we have never needed to perform a laparoscopic/open splenectomy having been able to control the bleeding conservatively.

Method: Video presentation of a series of splenic bleeds successfully controlled and treated laparoscopically.

Results: In all of the cases we have achieved satisfactory haemostasis simply by application of compressive gauze, cauterization of small vessels and also ligacaps or surgical glue in some cases.

Conclusions: Splenectomy should be reserved only to uncontrollable bleeds and unstable patients since it does increase mortality and morbidity. Patient compression and application of haemostatic agents is often enough to achieve haemostasis. Requesting the anesthetist to keep the blood pressure low can usually be useful but a second look when normal blood pressure is restored is paramount before exiting the abdomen.

VK.71 Revision of Lap Band to Sleeve Gastrectomy- How We Do It?

PRESENTER: S. Baig¹

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Introduction: Conversion of Lap Band to another bariatric procedure for weight loss failure is becoming an increasingly familiar procedure. The surgery is either staged or as single procedure- the latter involving more risk. Gastric Bypass is the more preferred procedure of choice. However some authors have reported good results with Sleeve procedure too. We present here a video of our technique keeping safety as a primary goal.

Video Abstract: The video is a demonstration of how to convert in a single stage a Lap Band to Sleeve Gastrectomy. The following steps have been shown in the video that we think is important for safe surgery:

1. The creation of safe pneumoperitoneum
2. Adhesiolysis
3. Excision of falciform ligament
4. Adhesiolysis of the Band from the Liver
5. Adhesiolysis of the capsule of the Band
6. Dissection of the left crus keeping traction on the Band
7. Removal of the Band
8. Division of greater curve from the omentum from pylorus to hiatus
9. Stapler firing from antrum to fundus- use of long limb cartridges vital
10. Suture reinforcement at the GE junction and the fundus

VK.72 Do We Need to Remove the Fibrous Capsule During Gastric Band Removal

PRESENTER: S. AlSabah¹

Co-authors: A. AlMulla¹, K. AlEnezi¹

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This video presents the case of a 31 year old female who had an adjustable gastric band in 2008 and then had it removed in 2011 due to vomiting and intolerance. After removal she complained of dysphagia and vomiting, therefore multiple sessions of balloon dilatation were done, however, all the sessions failed. The barium swallow showed narrowing and delayed emptying of barium followed with mild dilatation of the lower esophagus. The CT scan also showed dilatation of the lower esophagus with a constricted segment below the fundus, suggesting a fibrotic area. A fibrous capsule, resembling a gastric band, at the same level of the previous gastric band was appreciated by laparoscopy and endoscopy. A

fibrous capsule was dissected and removed. Intraoperative endoscopy showed no stenosis or leakage. In conclusion, is it mandatory to remove all fibrous capsules during gastric band removals?

VK.73 Gastric By Pass: Our Technique

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Introduction: We present the surgical technique for Gastric By Pass at Italian Hospital.

Contents Description: Patient in dorsal decubitus in the French position, under general anesthesia with compression stockings. Patient fixation. Access to abdominal cavity, semiology. Harmonic scalpel section of left gastrophrenic ligament with localization of left pillar. Pylorus identification, gastric section distal margin 4cm. Short vessels section with harmonic scalpel. Hemostasis control. Bed drainage. Stomach extraction through paraumbilical trocar. Access closure.

VK.74 Roux-En-Y Esophagus Jejunal Anastomosis to Treat The Hiss's Angle Leak Caused by Sleeve Gastrectomy

PRESENTER: L. Cortiano¹

Co-authors: A. Branco¹, L. Crippa¹, J. Sampaio¹, L. Nassif¹, A. Weiss¹

¹CEVIP, CEVIP, Curitiba-Brazil

Introduction: Sleeve gastrectomy represents one treatment option for morbid obesity. This restrictive procedure provides significant weight loss. However, the Hiss's angle leak is one of complications related with this surgery and offers a difficult treatment.

Methods: Study submitted to and approved by the Institution Ethics and Research Committee. A 33-year old male patient, BMI = 36, with high blood pressure, insulin resistance underwent sleeve gastrectomy. On the fourth post-operative day, he presented abdominal pain associated with fever, and ultrasonography revealed pelvic abscess. Patient underwent laparoscopy with pelvic drainage, with no evidence of leak. On the seventh post-operative day, patient again presented abdominal pain and tachycardia. A new abdominal ultrasonography revealed per splenic abscess. The treatment consisted in a new laparoscopic drainage, total parenteral nutrition and antibiotic. On the eighteenth day, leak at Hiss's angle closed, and patient was released from hospital eating liquid diet. For 8 months, patient was hospitalized several times and another laparoscopies were performed. After this period, patient was sent to our department, and we chose to perform Roux-en-Y esophagus jejunal anastomosis. After the fourth post-operative day, patient was released from hospital without any complications.

Results: Conversion of sleeve gastrectomy into Roux-en-Y esophagus jejunal anastomosis due to a leak at the Hiss's angle.

Conclusions: Leak at the Hiss's angle is a complication inherent to sleeve gastrectomy and there isn't consensus about its best treatment. Several techniques are described, among them the Roux-en-Y esophagus jejunal anastomosis.

VK.75 Modified Laparoscopic Merendino Procedure for the Treatment of Noninsulinoma Pancreatogenous Hypoglycemia Syndrome (NIPHS) Following Bariatric Surgery

PRESENTER: L. Cortiano¹

Co-authors: L. Crippa¹, A. Branco¹, J. Sampaio¹, D. Gouveia¹, L. Nassif¹, S. Okayama¹

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NIPHS was recently recognized in persons undergoing bariatric surgery although knowledge and experience with this condition may not be commensurate with the number of such procedures being performed globally. In this video we report the case of a 47-year-old woman who underwent laparoscopic Roux-en-Y gastric bypass 9 years ago, coursing with daily postprandial hypoglycemia about 6 years after the procedure. In outpatient investigation, serum insulin and C-peptide were normal, without images compatible with focal pancreatic nodules on contrasted abdominal CT. Assuming the probable diagnosis of NIPHS without adequate response to clinical treatment, and having the patient rejected the hypothesis of pancreatic resection, a surgical procedure was designed based on entero-hormonal mechanisms to control the symptoms. By the third post-operative day, the patient was already free of hypoglycemia episodes. The procedure consisted of laparoscopic access, followed by release of adhesions in the upper abdomen with use of monopolar cautery. After identifying the alimentary limb shortly after the gastroenterostomy and the gastric remnant, a laterolateral anastomosis was performed in two planes between a segment 20 cm distally from the gastric pouch and the anterior wall of the gastric remnant, followed by section of the alimentary limb just distally to the new anastomosis. After being identified the previous enteroanastomosis, the alimentary limb was sectioned proximally to it with linear stapler. Following that, the mesentery was ligated with ultrasonic scalpel, the surgical piece removed and the procedure was finished after revision of the surgery and a negative methylene blue test.

VK.76 Conversion of Capella Surgery to Sleeve Gastrectomy After Gastro Entero Anastomosis Stenosis

PRESENTER: L. Cortiano¹

Co-authors: L. Crippa¹, A. Branco¹, J. Sampaio¹, L. Nassif¹, A. Weiss¹

¹CEVIP, CEVIP, Curitiba-Brazil

Introduction: Roux-en-Y gastric bypass is a safe and widely practiced method in bariatric surgical services all over the world. Nevertheless, the procedure presents inherent complications such as stenosis of the gastroenteroanastomosis and its clinical repercussions, the principal one being dysphagia.

Methods: A study submitted to and approved by the Institution Ethics and Research Committee. A 38-year old female patient, BMI = 49, clinically untreatable morbid obesity, stable weight for over 10 years, underwent Roux-en-Y gastric bypass. In the last post-operative phase, it evolved into untreatable stenosis of the gastroenteroanastomosis (GEA). After several endoscopic dilatations, it evolved into GEA perforation, treated conservatively. After clinical stabilization, the patient underwent resection of GEA areas of fibrosis as well as of the food loop and gastric pouch; esophagogastric anastomosis followed by sleeve gastrectomy and reconstruction of the intestinal transit. The patient remains under outpatient observation without dysphagia, and her weight loss has been kept.

Results: Conversion of Y-de-Roux gastroplasty with stenosis refractory to clinical treatment in sleeve gastrectomy, with a good clinical evolution.

Conclusion: The treatment of severe stenosis of gastroenteroanastomosis remains controversial. It is known that the treatment by means of endoscopic dilatations must be tried first; nevertheless, due to its refractory condition, new options must be studied and sought.

VK.77 Strategies of Dealing with Complex Hiatus Hernia During Bariatric Surgery: A Video Series Presentation

PRESENTER: R. Aguiló¹

Co-author: Y. Koak¹

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Introduction: Large hiatus hernia can be difficult to manage laparoscopically especially when discovered incidentally during Bariatric surgery. A video case series of seven patients is presented outlining strategies for dealing with grade 2–4 hiatus hernias.

Methods: Case 1: 60 year old male with morbid obesity BMI 45.9kg/m² had laparoscopic repair of large grade IV hiatus hernia and LRYGB.

Case 2: 57 year old female with severe obesity BMI 37.8kg/m² underwent laparoscopic repair of grade III hiatus hernia and LAGB operation. Case 3: 54 year old male with super obesity BMI 53.6kg/m² underwent laparoscopic grade III hiatus hernia repair and LRYGB.

Case 4: 62 year old female with morbid obesity BMI 42.5kg/m² underwent laparoscopic repair of incidental grade II hiatus hernia and LSG. Case 5: 41 year old female with super obesity BMI 55.5kg/m² underwent laparoscopic adhesiolysis, repair of incidental grade II hiatus hernia and LRYGB. Case 6: 56 year old male patient with marked centripetal & morbid obesity BMI 45kg/m² underwent Laparoscopic horizontal pouch gastric bypass operation for large congenital diaphragmatic hernia. Case 7: 44 year old female with mega obesity BMI 62.5kg/m² underwent a staged approach laparoscopic repair of grade IV hiatus hernia and then 3 months later LRYGB

Results: All patients have had more than 1-year follow with good results.

Conclusion: Laparoscopic management of large hiatus hernias can be challenging as a 1-stage procedure in Bariatric surgery patients, and 2-stage procedure can be used in complex situations.

VK.78 Laparoscopic Treatment of Chronic Gastro Pleural Leak Caused by LRYGB

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Introduction: Laparoscopic Roux-en-Y Gastric bypass is a safe and widely practiced method in bariatric surgical services all over the world. Nevertheless, the procedure presents inherent complications such as some leaks. The leaks could be divided in acute, sub acute and chronic. The gastro pleural leak is rare but can bring some clinical repercussions like pneumonia and pleural effusion.

Method: A study submitted to and approved by the Institution Ethics and Research Committee. A 52-year old female patient, BMI= 42, underwent Roux-en-Y gastric bypass 2 years ago. The main symptom was cough. After 8 months of investigation, the patient was sent to our department. The diagnosis was based on abdominal CT that showed a contained abscess without the leak's identification. We performed the laparoscopic treatment. In the first part, we identified the pouch leak. We performed the hand-sewn suture of the leak. We used a patch of omental tissue to help the hand-sewn suture. After this, we performed the drainage of the cavity.

Results: We kept this patient with parenteral nutrition until the 7th post-operative day. The normal diet was introduced after the negative blue test. The patient was released from hospital without any complications at the 12th day.

Conclusion: Chronic gastro pleural fistula is uncommon and its treatment could be difficult. The laparoscopic treatment is a good option in cases with leak identified, contained abscess or peritonitis.

POSTERS

P.001 Effect of Body Mass Index on Early Outcome After Coronary Artery Bypass Grafting

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Background: The aim of this study obesity is a risk factor for morbidity and mortality and to investigate whether in patients undergoing coronary artery bypass surgery (CABG).

Materials and Methods: After approval from the hospital ethical committee, 250 patients aged 33 to 82 were studied undergoing CABG. Patients were divided into four groups according to body mass index (BMI) as weak ($n = 15$; $BMI < 15$), normal ($n = 52$; $BMI = 19$ to 24.9), overweight ($n = 72$; $BMI = 25$ to 29.9) and obese ($n = 111$; $BMI > 30$). Surgical risk factors examined included age, sex, previous myocardial infarction, ejection fraction, hypertension, diabetes mellitus, chronic obstructive pulmonary disease, peripheral vascular disease, Cerebrovascular disease and urgency for surgical procedure. Surgical outcomes examined included using of inotropics, amount of bleeding, need for transfusion, sternal wound infection, and renal failure, mechanical ventilation time, intensive care unit stay and length of hospital stay. The data obtained from chi-square test, Kruskal-Wallis test and Mann-Whitney U test.

Results: The incidence of hypertension was significantly higher than baseline in the obese group ($p < 0.05$). Findings of other preoperative and perioperative parameters did not differ significantly. The level of bleeding was significantly lower in obese patients ($p < 0.01$). Transfusion needs was significantly lower in the group of obese compared to other groups ($p < 0.01$).

Conclusions: Our results indicate that the patients with obese BMI do not effect early outcome after CABG. Despite the comorbidities that are often present with obesity, obese BMI was not found to be an independent predictor of morbidity and mortality after CABG.

P.002 A Highly Efficient Protocol for Awake Fibre Optic Intubation in Morbidly Obese Patients

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Background: In morbidly obese patients excess fatty tissue on the cephalic and thoracic extremity tends to make intubation, mask ventilation and the function of the lungs worse than in normal weight patients. Even using Awake Fiber Optic Intubation (AFOI) on these patients could be a challenge for the anesthetist.

Aim: The goal of this study is to establish an efficient AFOI protocol in morbidly obese patients concerning the improvement of their safety and comfort.

Method: In this prospective, nonrandomized, single centre study, we included patients with BMI over 40-kg/sqm . and predicted or evidenced difficult airway, undergoing laparoscopic bariatric surgery in a therapeutic AFOI protocol. In order to improve their comfort, all the patients received different methods of regional anaesthesia of the upper airway and conscious sedation and analgesia with remifentanyl delivered by TCI and low doses of propofol. Changes in vital parameters, cough, limb movements and total time duration of the procedure were evaluated. A questionnaire about intra-operative recall of pain or discomfort was filled in by every patient.

Results: The AFOI protocol was utilised in 68 patients, out of the 434 patients who underwent laparoscopic bariatric surgery between May 2011- October 2012. The AFOI protocol was elective applied to 64 patients selected for predicted difficult airway due to obesity. 4 patients with laryngoscopy grade + 4 and failure of conventional intubation were included in the protocol, as well. 16 patients received transtracheal block and 8 patients got bilateral superior laryngeal nerve block. The cough reflex was abolished in all patients with transtracheal block (16/16) and in 5,8 % (3/52) of the other patients. There was one episode of transient desaturation but no other complications were experienced. The average duration of the AFOI in the operating room was 21 min (12–45). All patients described their anesthetic experience as satisfactory. **Conclusions:** AFOI in morbidly obese patients with predicted or evidenced difficult airway management is not easy, and the key for a successful AFOI is

to improve comfort and safety of the patient using a combination of regional anesthesia of the upper airway and an adequate sedation. All these were included in a step-by-step procedure known to and applied by every member of the team trained in this respect. We have described a protocol that in our hands appears safe and efficient.

P.003 An Evaluation of Candidates for Bariatric Surgery in a Children's Weight Management Program

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Introduction: The Centers of Disease Control reports 17% of children in the U.S. are currently obese. Bariatric surgery has demonstrated positive outcomes in adults and is being considered a viable alternative for the treatment of morbidly obese children. The objective is to evaluate children enrolled in a pediatric weight management program (HEROES) who would meet the requirements for bariatric surgery (age 14 years, BMI 35).

Methods: A retrospective analysis of medical records of children who participated in the HEROES program was completed. Descriptive statistics were used to summarize the measurements taken at the baseline visit between the two BMI groups. The Wilcoxon rank sum test was used to compare selected baseline measurements between the groups. A $p\text{-value} < 0.05$ was considered statistically significant.

Results: 29 children of the 161 records evaluated met the criteria for bariatric surgery (18%). The subjects meeting the criteria for bariatric surgery (age 14 years, BMI 35) had statistically significant higher mean systolic blood pressure values ($p=0.01$) and mean diastolic blood pressure values ($p=0.03$) than the subjects who did not meet the criteria. There was no difference between the two groups in resting heart rate, Hgb A1C, glucose, triglycerides, or cholesterol.

Conclusion: Children meeting the criteria for bariatric surgery have higher systolic and diastolic blood pressure values when compared to children who did not meet the criteria. Consideration must be given to all available treatment options in this population to avoid the long-term comorbidities associated with obesity.

P.004 Clinico-Mycological Profile of Mycosis Diagnosed in Diabetic Subjects at Annaba. Algeria

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Introduction: Diabetes is an autoimmune disease that affects more than 4.2% of the world population. The immune imbalance that causes diabetes, places it among one of the main factors associated with infections, including those of fungal origin.

Objective: The aim of the present work is to present the clinical and mycological profile of mycosis associated with diabetic and diagnosed at The laboratory of Parasitology-Mycology, CHU Annaba.

Materials and methods: This is a prospective study that takes place between November 2008 to November 2012, relating to the mycological examination of samples of the diabetic population recruited at the laboratory.

Results and discussion: The prevalence of vaginal fungal affection is noted, with positivity in 75% of cases. The fungal species most frequently isolated is *Candida albicans*. Nail involvement is also marked by isolation in more than 35% of the yeast *Candida albicans*, followed by the dermatophyte *Trichophyton rubrum*. The authors also report some deep and serious complications, including meningitis due to *Cryptococcus neoformans* and candidemia often generalized to other organs.

Conclusion: The results suggest the importance of the mycological proof before any clinical suspicion of superficial mycosis as well as deep mycosis in these fragile patients.

P.005 Correlation Between Pre-Operative Body Mass Index (BMI) and Excess Weight Loss (EWL) in Glycemic Control of Diabetic Obese Patients

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Introduction: Bariatric Surgery advantages on improvement of weight loss and glycemic control are well established, especially in diabetic patients.

Methods: It was analyzed retrospectively, clinical and laboratorial data of the first 7 diabetic obese patients submitted to surgery.

Results: All patients were female, mean age of 41.2 years, mean weight of 98.1 kg and baseline mean BMI was 38.1 Kg/m². All patients were using oral hypoglycemic agents; four of them were using insulin. Mean onset of diabetes was 10 years and mean glycosylated hemoglobin (HgA1c) was 9.0. After the first post operative month, no patient was taking oral hypoglycemic agents and one patient needed low doses of insulin. Mean weight was 85.8 kg; mean EWL of 39% and mean glycosylated hemoglobin was 6.7. After the first month, weight was positive correlated with HgA1c ($r=0,86$ $p=0,02$), EWL was negative correlated with HgA1c ($r=0,78$; $p=0,03$) and pre-operative BMI was negative correlated with EWL ($r=0,82$ $p=0,03$).

Conclusion: Despite the small number of patients and short analysis, pre-operative data such as BMI and EWL can be good clinical tools to evaluate patients that will have a precocious improvement in glycemic control.

P.006 Body Composition in Morbid Obesity: Correlation Between Body Adiposity Index and Bioelectric Impedance

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Introduction: Obesity has become an important public health problem. According, prevalence of morbid obesity is also growing. There is no consensus about the best method to measure body composition in morbid obesity individuals. A simple, easy, accurate, reproducible and inexpensive method is desirable. The aim of this study was to compare two methods that estimate body fat percentage (%BF), Body Adiposity Index (BAI) and Bioelectric Impedance (BI).

Population and Methods: We prospectively evaluated 233 adults with indication for surgical treatment of morbid obesity at Bariatric and Metabolic Group

at Hospital das Clínicas, University of Sao Paulo Medical School. All patients over eighteen years old were included after an Informed Consent and Agreement (Ethics Committee protocol number 8848). The data were collected before any intervention.

Weight (Wgt) and height (Hgt) were measured in a Welmy scale.

The circumferences were made with an inelastic tape-measure in a horizontal line. Waist circumference was the midpoint between the lower margin of the last palpable rib and the top of the iliac crest. Hip circumference (HC) was the maximum circumference of the buttocks.

BI was made using Biodinamics equipment (model 310) with the person lies. Four electrodes were fixed in pairs in the right hand and bare feet. An electrical signal is introduced and an impedance value is obtained. This is then entered into an equation: $BI = 23,25 + (0,09 \times R) + (1,00 \times Wgt) - (0,08 \times Hgt) + (0,13 \times Yrs)$ (BI in kilograms of BF, R= resistance in ohms, Wgt in kilograms, Hgt in centimeters and age in years). BAI was determined according to the equation: $BAI = (HC/Hgt \times Hgt) - 18$ (BAI in %BF, HC in centimeters and Hgt in meters);

Results: Mean age was 44 ± 11.34 years and mean body mass index (BMI) was 49.13 ± 7.65 kg/m². The female prevalence was higher (78.5%) and 41.2% was super obese (BMI > 50 kg/m²). Mean BF was 52.15% ($\pm 6.04\%$) by BI and 51.49% ($\pm 8.22\%$) by BAI. The difference between than was 0.67% ($\pm 5.21\%$), interclass correlation of 0.74 (CI 95%:0.67-0.79). BAI had no significant error in women ($p=0.611$) and in super obese ($p=0.368$). A significant error was observed in men ($p=0.06$), in patients with BMI < 50 kg/m² ($p < 0.001$) and when the waist-hip ratio (WHR) was more than 1.06 ($p=0,010$). We observed that BAI underestimated %BF BI in men (2.44%), in patients with BMI < 50 kg/m² (1.49%) and when the waist-hip ratio (WHR) was more than 1.06 (5,35%).

Conclusion: BAI is an inexpensive and non-invasive method that was successfully used to determine BF in morbid obese adults, especially in women and super obese patients with a WHR less than 1.06.

P.007 Mental Disorders Among Obese Patients Seeking Bariatric Surgery

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Background: Obesity and mental disorders are burdensome health problems commonly observed in general population and clinical samples. However, non-standardized assessment and small size of the sample might hamper conclusions of the investigations.

Objective: To estimate, through standardized interview, the frequency of mental disorders and correlated factors among obese patients seeking bariatric surgery.

Design: Cross-sectional

Methods: The sample was composed by 393 treatment-seeking obese patients (79.1% women; mean age 43.0 years, mean BMI: 47.8 kg/m²), who were recruited from a university-based bariatric center. Trained clinicians assessed the participants through Structured Clinical Interview for DSM-IV Axis I Diagnosis (SCID-I).

Results: The rate of current frequency of any mental disorders was 57.8% (57.6% men vs. 58.5% women). Anxiety disorders were the most frequent diagnosis (46.3%) among those participants with current disorder. Age, educational level and global functioning were associated with the likelihood of presenting current mental disorders. The lifetime rate of any mental disorders was 80.9% (81.7 men vs. 80.7% women). Lifetime affective disorders were the most frequent diagnosis (total 64.9%, bipolar disorders 35.6%, and depressive disorders 29.3%). Among those respondents presenting any lifetime mental disorders, about half of the sample presented 3 or more concurrent disorders.

Conclusions: Mental disorders are frequent conditions among obese patients before bariatric surgery. High rates of mental disorders suggest both disorders might exert mutual causal relationships or share common etiological factors. Prognostic implications of mental disorders on surgery outcome should be demonstrated in follow-up study.

P.008 Bariatric Surgery in Regional Australia for Type 2 Diabetes Mellitus

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Introduction: Type 2 diabetes mellitus (T2DM) due to obesity is increasing and this study aims to determine whether the type of bariatric surgery performed in a regional centre is a prognostic factor in the improvement or remission of T2DM. Laparoscopic sleeve gastrectomy (LSG) and laparoscopic adjustable gastric banding (LAGB) procedures were compared.

Method: A review of a single centre prospective database was undertaken on 181 LAGB and 98 LSG patients between 2007–11.

Fifty-two had T2DM and their percentage excess weight loss (%EWL) was compared. Improvement and remission was measured based on glucose tolerance test, HbA1c and pharmacological treatment pre-op and 1 year post-op. Definitions were in accordance with WHO guidelines.

Result: 30 LAGB and 22 LSG patients had T2DM. Improvement /remission of T2DM occurred in 25/30 (83.3%) LAGB patients and 22/22 (100%) LSG patients 1 year post-op, this difference was not significant (two-tailed Fisher exact test, $p=0.07$). LSG patients lost more weight 1 year post-op with mean %EWL of $66\pm 7\%$ compared to $47\pm 8\%$ in LAGB (independent t-test, $P<0.01$). All patients with a mean %EWL 22% achieved improvement or remission of T2DM irrespective of type of surgery.

Conclusion: Improvement or remission of T2DM was related to the percentage of excess weight loss at 1 year and the type of surgery was not an important factor in a regional centre. Patients with a BMI >30 and T2DM will continue to be offered either operation according to their preference, with emphasis placed on ensuring LAGB patients achieve at least 22% EWL through regular follow-up.

P.009 10 Years of Adjustable Gastric Band - Retrospective Results

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Introduction: Obesity has been considered a world health disease and the number of obese patients increases every year. Most of times it is associated to co morbidities. Diet and exercises are the first method used to lose weight, but many times it is unsatisfactory. In cases of morbid obesity, the best method is the bariatric surgery. The surgery consists in two procedures including restrictive or malabsorptive technique.

Methods: We evaluated all the patients that were submitted to gastric adjustable band in the last 10 years a tour servisse in Sao Paulo, Brazil. There were 320 patients both male and female aging between 15 and 69 years old. We could evaluate the weight loss of 167 patients who underwent to 5 year segment and the complications as well.

Results: From the amount of 167 patients, $12,5\%$ didn't have any weight loss and gained weight; $14,7\%$ had to took the band out because of erosion or

migration, 9% converted to sleeve gastrectomy or Y en Roux Bypass. The other $63,8\%$ of the patients did have weight loss varying between $1-100\%$ of the excess of weigh. $20,3\%$ lost $1-25\%$ of the excesso of weigh, $16,5\%$ lost $26-50\%$, $17,4\%$ lost $51-75\%$ and $37,8\%$ of the patients lost $76-100\%$ of the excess.

Conclusion: This present study shows that the adjustable gastric band is a restrictive method to treat obesity, and the results are satisfactory in approximated 60% of the patients, and the weight loss variate according to the behavior and the emocional state of the patients.

P.010 Bibliometric Analysis of Bariatric Surgery Literature

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Introduction: Bariatric Surgery has considerably increased in the past two decades and the important scientific production in this area reflects this trend. We present the first bibliometric study analyzing the evolution of scientific publications in bariatric surgery

Methods: Data were extracted from the Scopus database for the period 1993–2012, using the query "bariatric surgery", "laparoscopic gastric banding", "sleeve gastrectomy", "gastric bypass". The analysis included the total number of articles, geographical origin by country and continent, impact factor and journal allocation.

Results: The number of publications has increased by more than 20 times in the analyzed period. Gastric band, gastric bypass and sleeve gastrectomy have been the subject of 148, 91 and 50 publications per year, respectively. USA are the country with the highest number of publications ($n = 3798$), followed by the UK ($n = 484$) and Italy ($n = 470$). When the number of publications is weighted by the number of inhabitants, the most prolific country is Switzerland with 20.1 publications per million inhabitants, followed by USA (12.1) and Australia (11.1). The highest mean impact factor belongs to Canada (4.02), followed by Italy (3.91) and France (3.88). Bariatric surgery literature is scattered over a great number of surgical and medical journals: the two specialized revues (Obesity Surgery and SOARD) publishing only 30% of articles.

Conclusions: The significant growth of the literature reflects the diffusion of bariatric surgery worldwide. This study describes the epidemiological and geographical features in obesity surgery publications.

P.011 The Clinical Outcome and Cost-effectiveness of LRYGB in Obese Patients with Type 2 Diabetes: Lithuanian Experience

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Introduction: Recently the LRYGB has been shown as a clinically and economically effective treatment of obese patients with type 2 diabetes mellitus (T2DM). However there is still few data from low-budget countries of Eastern Europe.

Methods: This is a retrospective analysis on a prospectively collected database of patients who underwent LRYGB for obesity and T2DM in a Lithuanian University of Health Sciences Hospital between January 2005 and January 2010. The inclusion in study criteria were as follows: LRYGB performed, type 2 diabetes has been established before surgery, follow-up period more than 12 months after surgery. 63 patients matched inclusion criteria. SF-36 questionnaire and SF-6D conversion model were used to evaluate the QoL. To evaluate and to compare the surgical and conventional treatment costs in obese T2DM patients, the cost utility analysis model was used. Kaunas regional

committee of bioethics approved the project. The data was processed and analysed using SPSS 15.0.

Results: The follow-up rate was 81% (51 patient). The mean age of investigated 34 women and 17 men was 56 years. The mean follow-up time was 28 months (12–62). Remission rate of T2DM was 45.1%. Physical components of QoL improved in operated patients ($p < 0.05$). The estimated direct costs of surgical and conventional treatment was 4805.4/10 years and 7417.5/10 years, respectively. The incremental cost-effectiveness ratio of LRYGB in obese patients with T2DM was 968.2/QALY.

Conclusions: We found the overall improvement in clinical outcomes and QoL after LRYGB in obese patients with T2DM. LRYGB is a cost-effective treatment in these patients.

	<i>Before surgery</i>	<i>After surgery</i>	<i>p</i>
Weight (kg)	149.3 ± 31.7 (range, 99–261)	99.2 ± 18.3 (range, 62–148)	<0.0001
BMI (kg/m²)	51.8 ± 8.7 (range, 34.4–81.7)	34.7 ± 6.6 (range, 23.6–46.8)	<0.0001
Arterial hypertension	35 (68.6%)	29 (56.8%)	ns
Dyslipidemy	31 (60.8%)	2 (3.9%)	<0.0001
HbA1c (%)	8.14 ± 1.7 (range, 5.5–12.1)	5.9 ± 0.6 (range, 4.4–7.1)	<0.0001
Fasting glycemia	8.7 ± 2.8 (range, 5.9–14)	5.4 ± 0.9 (range, 4.2–7.1)	<0.0001
Total cholesterol	5.9 ± 1.3 (range, 3.8–10.8)	5 ± 1.2 (range, 2.6–7.9)	0.002
LDL-cholesterol	3.7 ± 1.3 (range, 1.9–8.5)	2.9 ± 1.1 (range, 0.6–5.4)	0.02
HDL-cholesterol	1.1 ± 0.2 (range, 0.7–1.3)	1.6 ± 0.4 (range, 0.7–2)	0.001
Triglycerides	2.8 ± 1.9 (range, 1.3–8.3)	1.4 ± 0.8 (range, 0.4–3.5)	0.001
Antidiabetic drugs (n)	51	28	<0.001
Insulins (n)	19	9	<0.001
Insulin (av. dose, UA)	82	22	<0.001
Metformin (n)	47	27	<0.001
Metformin (av. dose, mg)	1630	880	<0.001
Sulfonylamyds (n)	18	2	<0.001
Antihypertensive drugs (quantity; median)	3	1	<0.001
Anticholesteremic drugs (n)	31 (61%)	2 (4%)	<0.001

P.012 Bariatric Surgery in a Tertiary Centre in Oman: First Steps of a Nascent Service- the Challenges and the Progress

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Introduction: Oman a nation on the Arabian Gulf has 2.8 million people mostly of younger ages. While Obesity and its sequelae are on an unrelenting roll in the Middle East and Gulf states, its prevalence in Oman, is around 28% while the Metabolic syndrome is in excess of 25%. The Royal Hospital in Muscat is the biggest tertiary teaching centre in the country. The Bariatric surgical service is one component of the work provided by the Upper GI Unit, [e.g. benign and malignant diseases, esp. Gastric Cancer] this is the first Bariatric surgery series reported from a major centre in Oman

Methods: Descriptive, Retrospective study of all Bariatric procedures done through 2012 and March 2013 at the Royal Hospital. Statistical analysis was done using SPSS 16

Results: There were 28 cases of Sleeve Gastrectomy. The average BMI was 44. Of these 54% had the Metabolic Syndrome. Gastroscopy done preoperatively in all cases saw 22 (78 %) with positive Helicobacter Pylori. There were no mortalities, no conversions, no anastomotic leaks, and no stenoses in this series. EWL was around 64% after 12 months of follow up. Improvement or resolution of Diabetes was seen in 82%

Conclusion: The challenges of offering full Bariatric surgery in the absence of a multidisciplinary structure is formidable. Nevertheless these results are encouraging and comparable to other established centers. As demand increases and patient awareness evolves, the view from this early station is promising especially with recent improved dedication of resources to this crucial target.

P.013 Results After Laparoscopic Roux-En-Y Gastric Bypass (Lrygb) for Morbid Obesity, Five-Years Follow-Up Results

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Introduction: A few data is available about long-term results of LRYGB for the treatment of morbid obesity. The aim of study was to investigate postoperative weight loss, diet changes and abdominal complaints 5 years after LRYGB.

Method: Retrospective study. The standardized questionnaire was sent to the patients who underwent LRYGB during 2005 – 2007y. Patients BMI, diet changes and abdominal complaints were analyzed.

Results: One hundred and eighty six patients (75.6%) of 246 answered the questionnaire. The mean age of patients was 40.45±10.9y. and BMI - 45.436 ±7.1 kg/m². The EWL% after 1 year was 62.67%, 2 years – 72.51%, 3 years – 71.9%, 4 years – 69.99% and 5 years 66.09%. Sixty-seven percent of patients experienced weight increase during 5 years follow-up. The patients who experienced weight increase had significantly more often continuous sensation of hunger ($p < 0.001$), and lack of self-control when they were eating ($p < 0.001$). Patients who were able to eat fat food and sweets do not regain weight more often than the others. Weight began to increase on the average 2.57 year after surgery. Food tastes changed in 32.3% of patients. Remission rate of type 2 diabetes was 51.9%. Vomiting, regurgitation of food was observed in 24.3% of patients. Most of patients (77.8%) had experienced dumping syndrome. The patients evaluated their weight loss by 8.25 and eating quality by 8.55 points (10 pointVAS scale).

Conclusion: LRYGB can achieve good long-term weight control, despite that more than a half of the patients complain of weight increase.

P.014 Prevalence of Success, Failure and Regained Weight After Two Years of Roux-En-Y Gastric Bypass

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Introduction: Bariatric surgery is highly effective in reducing body weight and improvement of comorbidities associated with morbid obesity. Most patients lose more than 50% of excess weight (excess weight loss - EWL) after two years of bariatric surgery, but about 30% do not reach that goal, or regain the lost weight.

Objective: To determine the prevalence of success, failure and regained weight after 2 years of bariatric surgery.

Methods: A retrospective study using data collection from medical records of patients who underwent Roux-en-Y gastric bypass at public university hospital of Paraná. Weights was evaluated preoperatively, after 2 years of surgery and current weight was seen on 141 individuals (125 women) with a mean age of 50,60 ± 10,63 years. Results: In this sample, 11,35% (n =16) were not successful with the surgical procedure (EWL = 27.74 ± 13.67%) and 26.24% (n = 37) recovered 21.83 ± 0 65% of the minimum weight reached after two years postoperatively (EWL = 36.94 ± 10.83%). Among those who were successful, the average EWL was 69.11 ± 11.37%. There was a significant difference in pre surgical BMI (Body Mass Index) between patients that had insufficient weight loss after surgery and patients with adequate weight loss (53,02 ± 7,69 x 48,91± 7,54 kg/m² respectively, p = 0.0382).

Conclusion: Bariatric surgery is effective for weight loss, predisposing to a better quality of life. Protocols and a multidisciplinary team are important for adequate follow up, to reduce failure rates and/or regained weight after gastric bypass.

P.015 Psychological Aspects of Evaluation in Patients Candidates for Surgical Treatment of Obesity

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Objective: The aspects of depression, anxiety and compulsive eating are common psychological disorders in the obese population and should be considered in evaluating psychological safety of the surgical treatment of obesity. So we had as objective to characterize the sample population and evaluate these aspects in patients who are candidates for surgical treatment.

Methods: An observational, cross-sectional in 300 obese patients of both sexes selected for psychological evaluation and surgical treatment of obesity in the period from 2007 to 2012. Depression and anxiety were assessed by the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). The presence and intensity of binge eating were assessed by the Scale Binge Eating (BES).

Results: We identified a mean age of 43.29 ± 11.45 years and BMI of 45.10 ± 6.57 kg/m². Most were female (86.3%), married (57.3%), with lower level of education for 8 years of study (48%) and occupation without formal employment (47.3%). At the beginning of the evaluation, 52.0% of patients had depression, anxiety, 51.3% and 25.7% binge eating.

Conclusion: The occurrence of severe psychological disorders postoperative justifies the importance of an investigation of the emotional and personality structure of the obese preoperatively. A psychological evaluation should signal to the entire medical team possible risks and benefits to the patient, building therapeutic strategies that may contribute to a better quality of life and successful surgery. The psychological investigation in the preoperative period provides essential elements for best treatment in the surgical process.

P.016 Nonalcoholic Steatohepatitis in Gastric Bypass: Lack of Correlation with Obesity Grade and Aminotransferases

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Introduction: Diagnosis of severe forms of nonalcoholic fatty liver disease (NAFLD) in preoperative bariatric surgery is difficult. Liver biopsy is the ideal method for diagnosis, and degree of insulin resistance is related to more severe forms of NAFLD. In this study we aim to correlate metabolic factors with liver histology in morbidly obese patients before gastroplasty.

Methods: Waist-hip ratio, BMI, blood glucose, cholesterol, triglycerides and aminotransferases were measured, and liver biopsy was done intra-operatively. NAFLD was classified as grade I: mild to moderate steatosis, grade II: diffuse steatosis and inflammation, and grade III: periportal fibrosis with steatosis, and grade IV: cirrhosis.

Results: 35 patients were included, mean duration of obesity 18 years, mean BMI of 53.04 kg/m². NAFLD was found in 31 patients (88.6%), being grade I in 10 (32.2%), grade II in 14 (45.2%) and grade III in 7 patients (25.6%). Nonalcoholic steatohepatitis (NASH) cases had lower mean age (33.4 years) and shorter average obesity length (14.1 years), compared with those who had pure steatosis. Waist-hip ratio was associated with hepatic steatosis (p = 0.054) and hypertriglyceridemia was the marker best correlated with more severe degrees of liver disease (p = 0.084). In this study, the aminotransferases were not correlated with the different degrees of NAFLD but to factors related to markers of insulin resistance.

Conclusion: NAFLD is highly prevalent in severe obese, aminotransferases and degree of obesity did not correlate positively with the degree of hepatic histology, but with hypertriglyceridemia and waist/hip ratio.

P.017 Prevalence of Food Intolerances and Dumping Syndrome After Two Years of Roux-En-Y Gastric Bypass

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Introduction: Food intolerances characterized by the presence of vomiting, diarrhea and dumping syndrome are complications found in most patients undergoing gastric bypass Roux-en-Y. Objective: To evaluate the prevalence of food intolerance and dumping syndrome after two years of bariatric surgery.

Methods: A retrospective and prospective study to evaluate nutrition, including application of a questionnaire for food intolerance and of the Sigstad scale to determine the prevalence of dumping syndrome. To date, 186 patients were evaluated (86% women) with a mean age of 50.01 ± 10.80 years and mean 65.98 ± 29.28 months after surgery.

Results: The prevalence of dumping syndrome in this sample was 44.09%. Food intolerances occurred in 60.7% of patients, more often in women (65%) than men (32%) (p = 0.002). The main foods mentioned were: candy (26.3%), rice (17.7%), meat (14.5%), milk (12.4%) and leafy vegetables (9.7%).

Conclusion: Given the high prevalence of food intolerance and dumping syndrome seen in this sample, post-operative nutritional monitoring

should be done on an individual basis according to the intolerance and the presence or absence of dumping syndrome with the goal of avoid possible nutritional deficiencies associated with symptoms and optimize the loss and / or maintenance of weight postoperatively.

P.018 The Effect of Grape Seed Oil on Diabetes

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Introduction: The objective of this study is the research antidiabetic effect of the oil of grape pipin the adult mice while following the profit of the body weight, the evolution of the biochemical parameters, the hepatic content of glutathion as well as the study of the histology of the endocrine pancreas.

Method: It is an experimental study led to the laboratory on 16 mice divided into four batches of 04 mice each one whose 02 batches are made diabetic by the intrapéritonéale injection of 150 mg/kg of alloxane. The oil of grape pip is managed daily by oral way with a concentration of 0.1ml/kg to body weight. Mice receiving distilled water are used as witnesses and diabetic untreated. After three weeks of treatment, the mice are sacrificed to jeun and the various parameters are determined.

Results: From the analysis of the results, we observed that the diabetic mice untreated have undergoes a fall of the body weight significant. The injection of the alloxane also caused a very clear disturbance of the glucidic, lipidic and proteinic metabolism where we noted an hyperglycemia, as well as a highly significant increase in the plasmatic content of cholesterol and triglycerides, uric acid, creatinin and albumin. On the other hand the concentration of total and hepatic proteins decreased. However, the activities of transaminases (TGO, TGP), were increased. Moreover, the diabetes disturbs the system of detoxification related to the glutathion and the histology of the pancreas showed the necrosis on the level of the small islands of Langerhans leading to their total disappearance. In addition, the treatment of the diabetic mice by the oil of grape pip showed an effect antihyperglycémiant by improving all the biochemical parameters and especially a cytoprotectrice activity opposite the pancreas by preserving the capacity of insulin secretion.

In parallel, the phytochimic study revealed that *the grape* is very rich in flavonoïdes, in tanis, sterols and terpenes. It contains, also, other families of compounds.

Conclusion: In conclusion; the oil of grape pip is endowed with a antidiabetic and antioxydant activity remarkable. This fact it can constitute a natural resource for the future studies on the sweetened diabetes and its complications.

P.019 Female Sexual Dysfunction in Women Seeking Bariatric Surgery

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Background: Although female sexual dysfunction (FSD) in obese women is common phenomenon, seldom studies have investigated FSD with validated measure tools. Moreover, it is known that obese women who seek for bariatric surgery have greater impairment of sexual function than who do not seek for treatment. Chronic renal failure is well known disease which includes high FSD rate. The aim of this study is to investigate a prevalence of FSD in a sample with seeking bariatric surgery and to compare the details of sexual function domains with age matched normal controls and chronic renal failure patients.

Materials and Methods: From August 2012 to December 2012, a total of 67 women agreed to check the sexual function during their preoperative evaluation using a validated questionnaire, Female Sexual Function Index (FSFI). Scores for individual FSFI domains (desire, arousal, lubrication, orgasm, satisfaction, and pain) ranging from 0 (or 1.2) to 6 were summed to produce a FSFI-total score (range = 2–36). A FSFI-total cut-off score of 26.55 was

used to identify participants with FSD. During those periods, FSFI was evaluated in age matched normal healthy controls and chronic renal failure patients who agreed with checking their sexual function. For statistical analysis, Fisher exact test and one-way ANOVA with post hoc test were performed.

Results: The prevalence rate of FSD in obese women was 86.4%, and those of normal controls and CRF patients were 87.5% and 72.2%. By Fisher exact test, there was no significant difference among the three group ($p=0.089$). But for FSFI, all domains except “desire” were significantly lower in obese and CRF patients than normal healthy controls. The total score of FSFI was also significantly greater in normal healthy controls than obese and CRF patients. After post hoc analysis, there were no significant differences between obese women and CRF patients including all domains of FSFI items and the total FSFI score.

Limitation of this study: Although we matched the age for comparative analysis and adjusted the confounding factors with exclusion of patients with neurologic disorders, psychiatric disease, and early menopause, there still exist of affecting confounding factors such as sociodemographic factors.

Conclusions: Although the prevalence showed no significant difference, sexual domain scores were significantly decreased in obese women who seek for bariatric surgery. The impairment of sexual function in this group is equivalent with those CRF group. FSD is prevalent problem in obese women and further studies are needed to investigate its real impact on life quality including sociodemographic factors.

P.020 Quality of Life in Patients After Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass

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Introduction: Sleeve gastrectomy (SG) from laparoscopic approach as well as laparoscopic Roux-en-Y gastric bypass (LRYGB) are considered to be effective methods of treatment of patients with morbid obesity.

The aim of the study is to analyze the quality of life in patients after sleeve gastrectomy and laparoscopic Roux-en-Y gastric bypass.

Methods: The studied group included 146 patients who underwent SG (72) or LRYGB (74). Prior to the procedure patients were interviewed about their comorbidities and the main complaints that impeded their daily functioning. Moreover every patient was asked to fill in questionnaires SF-36 and BAROS. On the 12th month after surgery surveillance visit was scheduled during which decrease of BMI, average loss of excessive body weight, regression of comorbidities and the reduction of medication doses as well as the appearance of new complaints were analyzed. Also the results of questionnaires filled before and after surgery were compared.

Results: Average decrease in BMI was 28% and average loss of excessive body weight was 37%. The results of SF-36 and BAROS questionnaires during surveillance visit was statistically significantly better than the results from before the surgery. Most striking improvement (300%) was noticed in the sphere of elimination of restrictions in social functioning, improvement of general well-being (116%), rise of vitality (102,3%) and physical functioning (100%).

Conclusion: Bariatric surgery performed with laparoscopic sleeve gastrectomy or Roux-en-Y gastric bypass even in the early post-operative period leads to the significant increase in the quality of life in patients operated due to the morbid obesity.

P.021 Effect of Roux-en-Y Gastric Bypass Surgery on Diabetes Neuropathy

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Introduction: Roux-en Y gastric bypass surgery (RYGB) has significant impact on improvement of glycaemic control in obese patients with Type 2 diabetes (T2DM); however, its effects on diabetes related peripheral neuropathy are not known. Previous studies had shown that rapid improvements in glycaemia through medical therapy could result in paradoxical deterioration in microvascular complications. Induction of rapid glycaemic control by RYGB may therefore have similar harmful effects.

Method: We investigated the impact of RYGB on peripheral neuropathy in obese patients with T2DM. The primary endpoint was the progression of neuropathy and the secondary outcomes were body mass index (BMI) and HbA1c.

Results: Thirty-two patients underwent nerve conduction studies (NCS) and thermal threshold testing (TTT) to assess large and small nerve fiber function preoperatively and at 1 year. Of these, 5 had peripheral neuropathy preoperatively; and 7 at 1 year ($p=0.75$). Compared to baseline, 29 patients had no change, and 3 deteriorated at 1 year.

Eighteen patients also underwent TTT. Of these, 8 had abnormal TTT preoperatively; 4 with normal pre-operative TTT developed abnormal TTT postoperatively ($p=0.31$). RYGB achieved significant reduction in BMI and HbA1c at 1 year ($p<0.0001$).

Conclusion: Our preliminary results do not show significant deterioration in large and small fiber function in obese T2DM patients at one year post surgery. RYGB appears to be safe for diabetes related peripheral neuropathy.

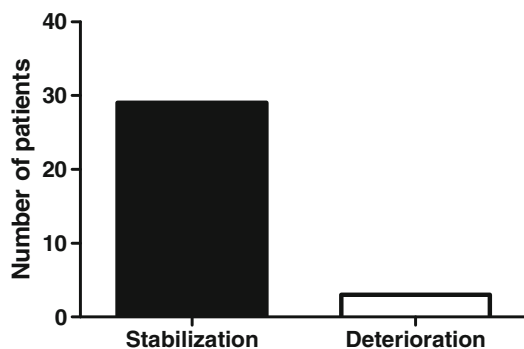


Figure 1. Progression of neuropathy following RYGB at 1 year.

P.022 Metabolic Profile of Patients Submitted to Roux-En-Y Gastric Bypass: A Follow-Up Study

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Introduction: Obesity is associated to several metabolic disorders which are characterized by impaired glucose tolerance, type 2 diabetes mellitus (T2DM), dyslipidemia and systemic hypertension. Bariatric surgery is the most effective treatment to promote sustained weight loss, resulting in improvement or resolution of obesity-related diseases. The purpose of this study was to describe the metabolic parameters and to evaluate the effectiveness of Roux-en-Y gastric bypass (RYGB) in improvement and resolution of obesity-related comorbidities.

Methods: Data collected from clinical records of patients submitted to RYGB at Hospital de Clínicas de Porto Alegre since 2008. The following variables were assessed: body mass index (BMI), waist circumference

(WC), excess weight loss (EWL), blood pressure, total cholesterol, triglycerides, low-density and high-density lipoprotein cholesterol, fasting glucose and glycated hemoglobin.

Results: 181 patients (84% women) with mean age of $40,1 \pm 10,5$ y, BMI of $49,2 \pm 7,8$ kg/m², WC of $134,7 \pm 27,8$ cm, 32,9% with hypercholesterolemia, 42,9% with hypertriglyceridemia, 71,2% with low HDL-c, 64,8% with LDL-c >100 mg/dL, 71,6% hypertensive, 37,3% with impaired glucose tolerance and 18,7% with T2DM. At 36 months, EWL was 63,9%, 100% patients presented with fasting glucose <126 mg/dL and HbA1c <6,5%, mean reduction for total cholesterol was 31 mg/dL, triglycerides 76,9 mg/dL, LDL-c 25,1 mg/dL and HDL-c increased 9,1 mg/dL.

Conclusions: The RYGB surgical procedure was effective to promote sustained weight loss and significant improvement of obesity-related metabolic disorders.

P.023 Laparoscopic Adjustable Gastric Banding (LAGB) in Private Outpatient Center: Case Series and Outcome of 50 Morbidly Obese Patients

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Introduction: Intervention has been required where obesity and its related comorbidities have become a serious health problem. LAGB is considered a safe surgical procedure to facilitate weight reduction and improvements in obesity related illnesses.

Method: We analyzed the data from 50 adult patients who underwent LAGB from January 2010 to March 2012. The study was focused on demographics, post-operative complications, changes of BMI and obesity-related comorbidities and patient's satisfaction.

Results: Female to male ratio was 4:1. The average age of the patients was 52 years. The average BMI was 43.3 before the surgery and 33.4, one year after the procedure. None of the patients showed serious post-operative complications (infection, bleeding, band slippage, etc.). There was a marked prevalence of diabetes (10%), hypertension (30%), hypercholesterolemia (40%), sleep apnea (40%), and GERD (20%) prior to surgery. Diabetics showed 90% improvement rate. Hypertension resolved in 35% and improved in 65% of the cases. 50% of the patients with high cholesterol levels had decreased cholesterol levels after the surgery and 25% had complete resolution. Those experiencing sleep apnea showed a 20% improvement rate. GERD became less severe in half of the patients and resolved completely in the other half. 65% of the patients were very satisfied with the results and they would recommend LAGB to others.

Conclusion: The results in a private setting are similar to high-volume academic centers. At the same time, the results vary according to each patient's momentum to remain on the required maintenance regimes, and perform the routine follow-ups.

P.024 Biochemical and Metabolic Course of Patients Submitted to Bariatric Surgery

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Background: Surgical treatment has proved to be effective for weight loss, improving the quality of life of obese individuals. However, metabolic and biochemical deficiencies may occur during the late postoperative period.

The objective of the present study was to assess the metabolic and biochemical in obese individuals for 12 months after Roux-en-Y gastric bypass (RYGBP).

Methods: Thirty patients with mean body mass index (BMI) of 48 +/- 8 kg/m (2) were submitted to RYGBP. Anthropometric, metabolic and biochemical data were obtained before and for 12 months after surgery.

Results: There was an average weight and excess weight loss of 35% and 90%, respectively. We analyze C-peptide, cortisol, TSH and T4, hepatic transaminase and uric acid during the 12th month. We obtained interesting results, for example, serum uric acid elevation on first month pos operatory associated symptomatic hyperuricemia. Iron and fiber intake was significantly reduced, remaining below recommended levels throughout the study. Serum cholesterol, low-density lipoprotein cholesterol, and glycemia were reduced.

Conclusions: RYGBP was effective for weight loss and for the reduction of obesity rates and risk factors for co morbidities. This analyze of data showed an improvement bioche mical and metabolic parameter during 12th month. The diet of these patients, who frequently present inadequate intake of macronutrients and micronutrients, should receive special attention.

P.025 Bariatric Surgery Results on Metabolic Control of Diabetic Patients

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Introduction: Several studies have shown improvement in the metabolic control of type 2 diabetes mellitus (DM), and even complete remission, after bariatric surgery (CB) in obese patients. Our aim was to evaluate the evolution of DM in obese after CB.

Method: We reviewed the records of diabetic patients who underwent to bariatric surgery between 1998 and 2012 in the Araba University Hospital (Txagorritxu). Using SPSS, we did a descriptive analysis of the sample and tried to seek an association between remission / persistence of DM and known duration of diabetes, treatment intensity, surgical technique and % overweight lost (%OWL).

Results: N = 49 Female: 32 (65%) Male: 17 (35%) CB average age: 49 ± 7 (28–60) Mean duration of known diabetes: 5.5 ± 5 years. CB: Sleeve Gastrectomy (SG), 9 (19%); Standard Gastric Bypass (SGBP), 32 (65%); Metabolic Bypass (MGBP), 6 (12%) and Distal Gastric Bypass (DGBP), 2 (4%).

Treatment	Previous (n=49)	At hospital discharge (n=49)	2 years after CB (n=46)	5 years after CB (n=29)
Diet	23%	69%	72%	70%
Oral antidiabetics (OA)	47%	14%	24%	24%
OA + GLP-1 agonists	2%	0%	0%	0%
OA + insulin	18% (80 ± 39 IU)	4% (25 ± 15 IU)	2% (37 IU)	3% (42 IU)
Insulin	10% (70 ± 35 IU)	12% (23 ± 10 IU)	2% (26 IU)	3% (33 IU)

	Previous (n=49)	2 years after CB (n=46)	5 years after CB (n=29)
BMI	46±7	30±5	32±8
% OWL	0%	75±20%	66±22%
Fasting glycemia (mg/dl)	177±61	103±23	108±31
HbA1c	8±2%	5,9±1%	6,5±2%
DM	100%	29%	38%
Prediabetes	0%	17%	14%
Remission	0%	52%	48%

Association with persistence / remission of DM with: years of known DM before surgery, p = 0.002 at 2 years and p = 0.047 at 5 years; intensity of treatment prior to CB, p = ns; surgical technique, p = ns; % OWL, p = ns.

Conclusions: -In our sample, at hospital discharge, there was a reduction of the treatment needs of 60% and, 5 years after CB, the 48% of patients remained in diabetes remission.

-The years of known diabetes before surgery are significantly higher in those patients with persistence of DM at 2 and 5 years of the CB.

P.026 Preoperative Comorbidities of Morbidly Obese Patients Undergoing Bariatric Surgery: Morbidity, Assessment and Management

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Introduction: Bariatric surgery is well established as a safe and effective treatment for severely overweight and related metabolic diseases. An extensive preoperative assessment and proper management are warranted due to the increased morbidity and mortality related to the high prevalence of comorbidities in morbidly obese patients. This article aims to investigate a proper preoperative assessment and management of preoperative comorbidities in morbidly obese patients.

Method: A general description of comorbidities in bariatric patients was reviewed and a clinical practice path in assessment and management of comorbidities was summarized.

Results: Morbidly obese patients frequently carried serious comorbidities in cardiovascular, pulmonary and digestive systems. The most common abnormalities included hypertension, left ventricular wall hypertrophy, ST and T wave abnormalities, obstructive sleep apnea, ventilator dysfunction, and nonalcoholic fatty liver disease. A routine specialized preoperative evaluation could find the potential abnormality and screen the appropriate patients. Prophylactic treatments obviously reduced the morbidity of peri-operative complications. A brief clinical practice path in assessment and management of preoperative comorbidities in bariatric surgery was summarized.

Conclusion: Comprehensive preoperative evaluation and proper management is essential to appropriately select and prepare bariatric patients, and minimize surgical risk.

P.027 Intra-Abdominal Pressure in Patients with Morbid Obesity

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Introduction: The tolerance of patients with morbid obesity to intra-abdominal hypertension (IAH) after bariatric surgery remains unclear.

Methods: 53 patients with morbid obesity, 26 (49,1%) men and 27 (50,9%) women, mean age 44,3±8,9 years, range 16–63, underwent open biliopancreatic diversion with duodenal switch and sleeve-gastroectomy in 39 (73,6%) and 14 (26,4%) cases respectively. Intra-abdominal pressure (IAP) was measured perioperatively via urinary catheter in line with WSACS recommendations.

Results: Mean body weight of patients – 153,9±27,6 kg (107–215), mean body mass index (BMI) – 51,9±7,7 kg/m² (40–75,4). The patients were divided into 2 groups: with BMI 40–49,9 kg/m² (1st group – 22 patients) and with BMI 50 kg/m² (2nd group – 31 patients). Chronic IAH (IAP 12 mm Hg) was diagnosed in all patients. Mean initial preoperative IAP in group 1 – 13,1±1,4 mm Hg (12,1–15,4), in group 2 – 15,7±1,7 mm Hg (12,9–18,0) (=0,017). We observed increased IAP to 17,4±1,6 mm Hg and 19,7±1,8 mm Hg in patients of group 1 and 2 respectively in the day of bariatric surgery and the first postoperative day. The IAP in 2 patients of group 1 and 9 patients of group 2 was above 20 mm Hg. Despite this, there were no postoperative complications specific for IAH as well as cases of abdominal compartment syndrome. IAH regressed to preoperative level due to medical treatment during days 2 – 3 after surgery.

Conclusion: The patients with morbid obesity have demonstrated high tolerance to IAH after bariatric surgery.

P.028 Rescue Revisional Bariatric Surgery: Which Choice When the Second Operation is Worse Than the First Complication?

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Introduction: With the increasing number of bariatric operations a consequent increase in revisional procedures is expected. Despite most procedures are potentially reversible, the aim is to offer to the patients a definitive treatment for obesity. Moreover the revisional bariatric surgery should offer a definitive treatment to the complication of previous surgery.

Methods: We present the case of a complicated vertical banded gastroplasty (previously performed with open approach) after which the patient experienced the erosion of the marlex band and was then converted to sleeve gastroectomy in another centre. The marlex band was not removed during the second surgery. The patient continued to complain abdominal pain and was therefore referred to our centre. During the third operation, the residual distorted gastric sleeve showed a whole-thickness defect on the medial gastric wall extended over the 2/3 circumference, as the marlex band was removed. The defect itself has been used for the further conversion to RYGB with biliopancreatic limb of 40cm and alimentary limb of 150cm (the other options being: bilio pancreatic diversion or total gastroectomy). Interestingly, it wasn't necessary to staple the gastric remnant since it resulted already excluded by the progressive erosion and scarring of the marlex band.

Results: The postoperative stay was uneventful. An easier alternative algorithm to treat such complications is also proposed.

Conclusion: While primary bariatric procedures are highly standardized, revisional surgery often require to adapt the techniques to the intraoperative findings, reducing dramatically the degree of freedom of the surgical choice.

P.029 Amylase Value Anomalies Due to a Laparoscopic Sleeve Gastroectomy Procedure - Causes and Implications

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Objective: In some patients undergoing Sleeve Gastroectomy for morbid obesity, we observed a sharp increase in the level of Amylase enzyme in the drain. The main purpose of this study is to examine the incidence of Amylase

enzyme amount increase, in the blood, the urine and the drain, after Sleeve Gastroectomy procedure, and thereby inference conclusions which may enable the use of this data for optimizing the treatment after the procedure.

Methods: A prospective controlled clinical study including all morbidly obese patients undergoing laparoscopic sleeve gastroectomy at our institute during one year period was conducted. The data being collected includes: demographic information such as BMI, age, gender, weight, height, Co-morbidities, Complications during surgery. Laboratory data, which is taken before the operation, a day after it and two days after it. In cases of high Amylase, and a further laboratory testing which includes Amylase is being performed after week. Complete blood counts, outpatient complication, Additional hospitalization due to complications, and Mortality during hospitalization or within 30 days of the procedure.

Results: The study is ongoing for the last seven months and will take place for the next five months, and so far the study includes about 100 patients. Hence, the results were not yet statistically validated.

Hyperamylasemia was observed in 4% of the patients who went through a successful Sleeve Gastroectomy Procedure. No gastric leak was observed in all patients. Nevertheless, we have found a correlation between a rise in the amylase in blood, and leukocytosis, neutrophilia, lymphopenia, and left shift toward band cells.

Discussion: The ability to know who is likely to develop abnormal finding may help diagnosing cases where this data is indeed requires intervention. In addition, if there is a connection between the rise of the Amylase enzyme and complications or life-threatening situations, the discovery of this finding in patients after the procedure may help the medical team recognize them earlier, while they are still asymptomatic.

P.030 Revisional Bariatric Surgery

PRESENTER: M. Sahin¹

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Background: Bariatric surgery has become more common due to the worldwide growing incidence of obesity. Revisional surgery in bariatric field is becoming an important issue. It has been associated with higher complication rates, and there is no consensus on the standardized surgical approach to revisional surgery. The aim of this study was to review the revisional procedures performed at our institute.

Methods: A retrospective review of a prospectively maintained database was performed. Data were reviewed for all patients undergoing revisional procedure. Data included age, gender, preoperative weight, body mass index (BMI) (prebariatric and prerevisional surgery) and postoperative complications.

Results: Seventeen patients (one male and sixteen females) had revisional surgery. In the patients who had a previous vertical banded gastroplasty, failed weight loss was the indication for 3 patients (75%) and outlet stenosis for one patient (25%). In the patients who had previous laparoscopic adjustable gastric banding, mechanical side effects were the indications (2 band slippage, 6 band migration, 4 failed weight loss) of surgery. The gastrocolic fistula was the indication of surgery in the patient who had been revised from vertical banded gastroplasty to sleeve gastroectomy. At the mean follow-up of 11.1 months (3–18 months), the mean BMI and percentage of excess BMI are 32.3 kg/m² and 36.4%, respectively. There was one stapler-line leakage.

Conclusion: Our study suggests that revision can be performed safely. Weight loss is satisfactory. The type of revisional procedure as well as appropriate patient follow-up and compliance will be important for the final outcomes.

P.031 Non Passage of Contrast in to the Alimentary Limb (Through the Gastrojejunostomy (GJ)) in the Post-operative Gastrografin Study After a Gastric Bypass Surgery !

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Introduction: Non passage of contrast in to the alimentary limb (through the gastrojejunostomy(GJ) in the post operative gastrograffin study after a gastric bypass surgery(RYGBP) would generally be regarded as a sign of stomal edema or obstruction due to hematoma – but does this hold true for a wide linear stapled GJ also? The following case presentation shall further elaborate on this fact.

Case presentation: A 45 year old diabetic male patient with a BMI of 44.2 was operated for a RYGBP. The procedure was uneventful; a linear stapled GJ with 50 cm Biliopancreatic limb (BPL) and 150 cm Alimentary limb and a single staple jejunojunostomy (JJ) was performed. The patient was comfortable on the day of surgery and the coming morning when he was taken to the radiology deptt. for a gastrograffin study. The study demonstrated non passage of contrast in the alimentary limb and pooling of the contrast in the gastric pouch, however no leak was seen. A diagnosis of GJ edema was made and the patient was not allowed orally. The patient started vomiting non bilious clear fluid on POD 1, the pulse rate was 80/ min. and vitals were well maintained, urine output was only 20ml/ hr.. On POD 2 patient developed sudden tachycardia and breathlessness – NCCT abdomen demonstrated a leak (of the previously ingested oral contrast) at the GJ site.

Management and treatment: A decision to re laparoscope was taken. On re laparoscopy, dilated alimentary loop and BPL with a dilated stomach was seen along with a leak at the GJ through the staple line. The common limb of JJ was not dilated and thus the diagnosis of a JJ obstruction was made. The obstruction was corrected by a side to side anastomosis of the alimentary limb to the common limb after ascertaining the patency between the BPL and alimentary limb. A feeding gastrostomy was done along with repair of the GJ leak. The patient aspirated fluid during tracheal intubation at the time of re laparoscopy and required vigorous physiotherapy and antibiotic cover in the post-operative period. The patient recovered gradually and was discharged 7 days after the second procedure on gastrostomy feed. A gastrograffin study done after 4 weeks demonstrated no leak at the GJ, following which the gastrostomy was removed and oral feeding was started.

Conclusion: We conclude that the common dictum of re laparoscopy if the bariatric patient is not recovering well is of utmost importance. Secondly, atleast two staple fires in different directions should be used for JJ anastomosis to ensure a wide and patent JJ to avoid this complication.

P.032 Vascular Anomaly as a Rare Cause of Dysphagia After Bariatric Surgery

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Introduction: We report on a 36 year old female with an initial BMI of 46 and Crohn's disease who suffered from severe dysphagia after sleeve-gastrectomy.

Method: Prospektively registered data were retrospectively evaluated and compared with the literature.

Results: After an initially uneventful sleeve-gastrectomy and serial endoscopic dilations up to 40mm a transformation to Roux-en-Y bypass had to be done for persisting dysphagia. While postprandial dysphagia continued, further extensive diagnostic procedures could not demonstrate any anatomical or functional pathology related to the gastric bypass. At a point when we were considering referral for psychosomatic treatment we asked a further bariatric centre for a second opinion. The cause of her symptoms was found to be an extraluminal compression of the proximal esophagus by an atypical outlet of the right subclavian artery, a so-called lusorian artery. By then, and unaware of her vascular anomaly, a further external department unfortunately performed a complete residual gastrectomy, which also failed to resolve her symptoms. Apart from conservative swallowing training, the only remaining treatment

option is vascular surgery to resite the right subclavian artery. In the meantime the patient's quality of life had deteriorated further. Her present BMI is 22.

Conclusion: In cases of persistent postbariatric dysphagia for which extensive diagnostic measures cannot find a morphological or functional explanation in connection with the bariatric procedure it is thus recommended to consider a causative vascular anomaly. In our case an earlier such diagnosis would have prevented unnecessary redo-operations.

P.033 Value of Endoscopic Stenting in Complex Bariatric Complications. The Surgeons and the Endoscopist Opinion Our Experience of Positive Outcomes in Three Different Cases

PRESENTER: F. Villa¹

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Introduction: We have reviewed three complex cases that we have encountered in the last two years of our practice. The common factor was the difficulty of managing the recurrent strictures because of the amount of scar tissue and inflammation produced by several interventions and leaks. Endoscopic dilatation offered temporary relieve and surgical approach was often unsuccessful. Conservative management was poorly tolerated and in none of the cases led to resolution.

Method: Review of three cases characterized by several severe complications and failure of conventional surgical and endoscopical approaches.

Results: Endoscopic stenting has been for all three cases a valid aid for their management and the key for their resolution

Conclusion: Covered stents are assuming a clear role in the management of leaks and anastomotic strictures in the bariatric patient, when used by experienced endoscopists, correctly positioned and kept in place for limited time. In the absence of clear indications and guidelines we opted for the stenting on the basis of previous experience, review of the limited literature but more than all as last option available. One of the cases confirms our general perception that in case of a leak, when conservative management is not recommended, the positioning of a stent must not be delayed and possibly performed on table together with an eventual wash out and positioning of a drain. We believe that collecting a meaningful number of similar cases will be an input for the Industry to produce stents specifically designed for this purpose and an increase of their usage.

P.034 Hypoglycaemia Developing in a Patient After Laparoscopic Duodenal Switch

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Introduction: Hypoglycaemia developing after bariatric surgery is a rare complication that is being increasingly reported in the literature. However there is only one case report of hypoglycaemia (blood sugar 3.1mmol/l) developing after laparoscopic duodenal switch. We report the first case in the literature of a patient that developed profound hypoglycaemia (blood sugar < 2.8mmol/l) after 2nd-stage duodenal switch operation.

Method: A super-obese 54 year old Asian female (BMI 58kg/m², weight 148.8kg) with co-morbidities of type 2 diabetes mellitus (not on insulin), hypertension and obstructive sleep apnoea underwent laparoscopic sleeve gastrectomy in January 2006. After an initial weight loss of 48kg she started to gain weight. In Sept 2009 a laparoscopic duodenal switch was performed.

Results: Profound hypoglycaemia at a blood glucose level of 2.2mmol/l was recorded two years after the duodenal switch operation. At this point an extra 49.6kg had been lost giving a BMI of 31.4kg/m². It was associated with signs of neuroglycopenic hypoglycaemia. Intestinal hurry was present to which the patient responded by decreasing food intake. She was aggressively managed by vitamin and mineral replacement therapy, higher protein intake, better

carbohydrate management and small bowel bacterial overgrowth treatment. At her last clinic review her symptoms and vitamin deficiencies were improving or stabilizing.

Conclusion: This is the first case report of a patient developing profound hypoglycaemia after duodenal switch operation that was successfully managed by aggressive carbohydrate manipulation and supplements.

P.035 Stapled Nasogastric Tube During Laparoscopic Roux-en-Y Gastric Bypass: Two Cases

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Surgery is a rapidly emerging treatment method for morbid obesity. After endotracheal intubation of a morbidly obese patient, just at the beginning of surgery, a nasogastric tube placement is a common procedure. If the surgeon prefers a restrictive type bariatric surgery, the nasogastric tube should be partially withdrawn into the esophagus for prevention of tube entrapment. Here, we reported two cases of stapling and sectioning of nasogastric tubes during laparoscopic Roux-en-Y gastric bypass. Anesthesiologists were thought that the tubes were withdrawn enough and the surgeons did not notice that the tubes were still in the staple lines. In both cases, tubes were sectioned into two parts, one part was in the gastric pouch and the other part was in the gastric remnant. Both cases were diagnosed during surgery and just before gastrojejunal anastomosis. Both gastric pouches and remnant stomachs were opened and the entrapped nasogastric tubes were removed. There was no need for conversion and the remaining procedures were completed without any problem. The operating times were prolonged almost 50 minutes in both cases. The postoperative courses of the patients were uneventful and their weight losses were as expected. Now, we ask to the anesthesiologists to place a nasogastric tube at the beginning of the procedure for decompressing the stomach and we request to remove the tube completely. After completing all of the anastomosis, we ask for a new nasogastric tube placement for anastomotic control with methylene blue and we remove this tube completely again at the end of surgery.

P.036 Transitory Esophagostomy with Pezzer's Catheter: A Novel Therapeutic Solution to Upper Gastrointestinal Suture's Leakage or Rupture of the Esophagus

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Introduction: Bariatric surgery has become one of the most common gastric surgery, and as the number of procedures rise, so are the possible complications, being the most relevant the anastomosis suture leakage, which leads to intraabdominal sepsis, septicemia and dead. This complication is seen also in esophagus rupture, and in the esophago-gastric anastomosis leakage in total gastrectomy for cancer with high mortality. The therapeutic solutions are diverse, like resuturing of the leakage, endoscopic autoexpandable stent, etc. None of them has shown an acceptable resolution's rate. The objective of this report is to present the transitory esophagostomy with Pezzer's catheter as a novel therapeutic solution to upper gastrointestinal suture's leakage or rupture of the esophagus.

Methods: Surgical Technique: Left cervicotomy anterior to the Sternocleidomastoid Muscle. Cervical esophagus is identified and ligated with a n° 1 poliglaclin suture (Vicryl), about 4 cm distal to the cricopharyngeus muscle, to exclude thoracic and abdominal esophagus (Fig. 1). A lateral esophagotomy is performed proximal to ligature. A Pezzer's catheter is inserted and then the esophagus is sutured with an absorbable material. Closure of superficial planes is performed to finish the procedure (Fig. 2).

This way saliva is derived and probability of closing of gastric fistulae is enhanced within a period of around three or four weeks. Because of absorbable nature of esophageal ligature, diversion of saliva is self-limited when recanalization of the esophagus is completed and Pezzer's catheter extracted.

Results: A total of 4 patients were operated on as a result of three esophagus rupture (one by dilatation after stricture secondary to sleeve gastrectomy fistula, and two by forced stent insertion after gastroesophageal junction cancer) and one gastrojejunal leakage after Roux-en-Y Gastric Bypass. Mean postoperative time before extraction of the Pezzer's catheter was 4.6 weeks. All of the patients closed their primary wounds, with no relapse.

Conclusion: Transitory esophagostomy with Pezzer's catheter should be considered as a safe and effective therapeutic solution to upper gastrointestinal suture's leakage or rupture of the esophagus.

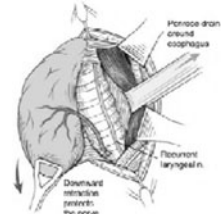


Figure 1

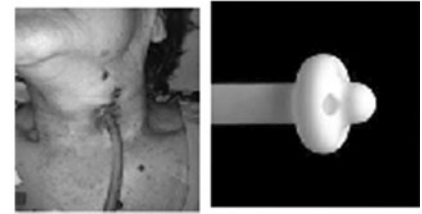


Figure 2

P.037 M-MOSS Scores Predict Mortality in Laparoscopic Gastric Bypass Surgery (LRYGB)

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M-MOSS scoring (Modified Montefiore Obesity Surgery Score) is used by many institutions to identify high risk patients prior to bariatric surgery [i]. Patients are scored for age, male sex, type of surgery, BMI, significant co-morbidities and previous abdominal surgery. We present a retrospective analysis of the M-MOSS scores of 385 consecutive patients undergoing LRYGB at a single institution

Methods: This is a retrospective study based upon prospectively collected data from 385 patients undergoing LRYGB for morbid obesity between 2007 and 2013. Each patient was retrospectively analysed for an M-MOSS Score. Clinical databases and records were then assessed for return to theatre, anastomotic leak, readmission and death. Paired T tests were used to compare the mean M-MOSS scores between the groups.

M-MOSS

Whittington Health **NHS**

M-MOSS Modified Montefiore Obesity Surgery Score

(≥ 4 indicates high risk patients – consider High Risk Anaesthesia Clinic and HDU)

Parameters	Risk	Score
Gender	Male	1
Age	≥50	1
BMI	≥50	1
Type of surgery	Gastric bypass / Sleeve gastrectomy	1
OSA	Confirmed	1
Significant co-morbidity	Yes (IHD, CKD, COAD, Arrhythmia, CVA, Insulin, Warfarin etc)	1
Previous abdominal surgery	Yes	1
Total		/7

Results: The average age of patient was 44.6 with a range of 21 to 71 years. The average M-MOSS score in patients that returned to theatre was 2.87, compared to 2.5 in those patients that did not require further. However this was not statistically significant (P = 0.22). Seven patients developed anastomotic leaks (average M-MOSS 3) compared to those without anastomotic leak (M-MOSS 2.5). However this was not statistically significant (p=0.35). The M-MOSS score in patients that died (n=5 M-MOSS 3.8) was significantly

higher than those who were discharged successfully ($n=380$ M-MOSS 2.5) $p = 0.025$.

Conclusion: This study indicates that a higher M-MOSS score was associated with a higher mortality $p=0.025$. M-MOSS score is a predictor of mortality in patients undergoing LRYGB.

P.038 The Management of Sleep-related Breathing Disorders in Obesity

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Prevalence of obesity have increased at a dramatic rate in the past few decades. Obese adults are at increased risk of morbidity and mortality from medical conditions, including hypertension, dyslipidemia, coronary heart disease, diabetes mellitus, and respiratory disease. Obesity is a serious disorder resulting in significant health impairment. In addition, individuals who are obese may experience a reduced quality of life owing to impairments in health. Sleep problems are commonly reported by obese adults and insufficient sleep has been identified as a risk factor for the development of obesity. Literature demonstrates relationships between sleep and obesity. Sleep duration has decreased as parallel to prevalence of obesity has increased. The increased prevalence of obesity has led to an increase in sleep disorders related to excess weight, such as the obstructive sleep apnea syndrome and the hypoventilation syndrome. Obesity-related sleep disorders remained a secondary concern. Management of obstructive sleep apnea syndrome and hypoventilation syndrome includes positive airway pressure for short-term management and weight loss for long-term management. Positive airway pressure (PAP) can be used as continuous PAP (CPAP) and bilevel PAP. Tracheostomy may be necessary in cases of PAP failure. Weight loss may be the most effective management for obstructive sleep apnea syndrome and hypoventilation syndrome. There are no large studies that examine the role of weight loss and weight reduction surgery in the treatment of hypoventilation syndrome. Patients who experienced hypoventilation only during sleep may also benefit from nocturnal noninvasive positive airway pressure.

P.039 An Early Rare Complication of Laparoscopic Gastric Bypass Surgery

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Introduction: Different postoperative complications after bariatric surgery may be seen. Nonspecific gastrointestinal complaints following gastric bypass surgery are very common. Altered anatomy makes diagnostic testing difficult. Imaging of the jejunojunostomy can be limited. Persistent symptoms and nondiagnostic testing may necessitate exploratory surgery. Mechanical intestinal obstruction following laparoscopic Roux-en-Y gastric bypass surgery (LGBP) is seen rarely in early postoperative period. When this problem is identified, revisional surgery is indicated. **Case description:** A 56-year-old female patient underwent LGBP. Patient was presented with nausea and vomiting on the postoperative day 5. Abdominal CT scan showed dilated Roux limb and no passage of oral contrast from jejunojunostomy. Upper gastrointestinal series showed evidence of contrast that didn't pass beyond the jejunojunostomy. Contrast was filling the remnant stomach. These findings raised concern for an obstruction at the jejunojunostomy. Diagnostic laparoscopy was performed after 2 days of hospital admittance. The Roux limb appeared deflated and somewhat larger in diameter. An adhesion of

jejunojunostomy to abdominal wall was determined. This adhesion was separated and laparoscopy didn't reveal any other pathology. Postoperative recovery was uneventful.

Conclusion: The incidence of mechanical obstruction is approximately 2% to 3% following LGBP. The level of obstruction is commonly at the jejunojunostomy leading to dilation of the Roux limb, biliopancreatic limb, or both. Causes of early mechanical obstruction include narrowing of the jejunojunostomy, angulation of the Roux limb, and obstruction of the Roux limb at the level of the transverse mesocolon. Conservative management of presumed mechanical obstruction has been attempted with some success. However, because of the complexity and multitude of causes not easily distinguishable by radiologic imaging, diagnostic laparoscopy is often needed.

P.040 Nursing Care of Patients with the Risk of Pulmonary Embolism and Deep Venous Thrombosis Following Bariatric Surgery

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Background: Obese patients undergoing bariatric surgery have particularly high risk of postoperative deep venous thrombosis and/or pulmonary embolism.

Aim: This review was conducted to determine the risk of deep venous thrombosis and/or pulmonary embolism following bariatric surgery, and summarize nursing interventions.

Methods: Searching the PubMed database, a computerized search of PubMed, ScienceDirect, Google Scholar, and OVID (CINAHL) (from 2008 to present) identified literature for this article.

Discussion: Preoperative teaching is an important component in order to relieve patient anxiety, prevent complications, and improve outcomes. The risk of deep venous thrombosis can be lowered by turning and positioning of the patient in every 1–2 hours and performing foot and ankle exercises. After taking preoperative patient history and physical findings, health care professionals should be notified to not to place pressure on the anesthetized patient to avoid circulatory compromise. Extra padding on pressure points can prevent tissue damage and circulatory impairment. Operating room nurse reports the intraoperative events verbally and submits electronic documentation to the postanesthesia nurse. After assessing the airway, breathing, and circulation should be maintained, and extremities should be inspected for clinical manifestations of deep venous thrombosis. Elastic stockings or sequential compression devices may be applied. The low-molecular-weight heparin can be used for prophylactic reasons.

Conclusion: In bariatric surgery, individual differences should be considered during perioperative nursing care.

P.041 Rhabdomyolysis After Bariatric Surgery: Case Report

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Introduction: Rhabdomyolysis is a rare but fatal complication of bariatric surgery. It is characterized by skeletal muscle necrosis with release of muscle enzymes into the circulation. We presented a case that developed postoperative rhabdomyolysis, acute kidney injury and neuropathy after robotic sleeve gastrectomy.

Method: A 33 year-old woman with BMI 72 kg/m² underwent robotic sleeve gastrectomy. Diabetes and high blood pressure were the associated illnesses. Patient was positioned on the operation table with the legs placed on stirrups with pads.

Results: Sleeve gastrectomy procedure was completed without any intraoperative unexpected event. The patient was hemodynamically stable

perioperatively. Duration of surgery was 7 hours. She was complaining of severe pain on lower legs postoperatively. Amount of urine was low despite sufficient fluid administration and its color was reddish-brown. Plasma creatine kinase (CK) was 81650 U/L. Blood urea nitrogen (BUN), creatinine, and hepatic transaminases were elevated. Aggressive fluid replacement and diuretics were initiated with the diagnoses rhabdomyolysis and acute kidney injury. BUN and creatinine levels decreased to normal in one week and CK level in several weeks. Findings of neuropathy were present on both lower extremities. Mobilization of the patient was delayed because of pain and weakness. Tramadol, duloxetine, pregabalin were given and physical therapy program initiated. The patient could walk without support two months after the operation. **Conclusion:** Mortality rates of rhabdomyolysis may decrease by early diagnosis. Padding pressure points during surgery, positional changes and reducing operative time are preventive measures. Routine CK level monitoring for bariatric surgery patients is proposed.

P.042 Value of Gastric Bypass and Sleeve Gastrectomy Following Failed or Complicated Gastric Banding

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Introduction: Laparoscopic gastric banding (LAGB) is a common bariatric surgery with a very low complication rate but the long term follow up shows us a high rate of late complications like slippage, migrations and failure of weight loss. What should be done with these patients?

Method: We analyzed our revisional surgery after LAGB to gastric bypass (GB) or sleeve gastrectomy (SLG) between 2006 and 2012 to consider perioperative complications, short and longterm outcome as a retrospective single center study. **Results:** GB and SLG are safe procedures after LAGB, sometimes it is necessary as a two-step procedure. GB and SLG are effective after weight loss failure in gastric banding. In some cases with good long term results after LAGB and followed revisional surgery caused by complication we found a weight regain.

Conclusion: GB and SLG are feasible with a low complication rate and good results, but not in every case.

P.043 Nursing Care in Bariatric Surgery

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Introduction: Obesity is the most common disease all over the world and affects the life quality and life expectancy. Bariatric surgery is one of the effective treatments of obesity. The popularity of bariatric surgery in the treatment of extreme obesity has raised awareness of the unique considerations in the care of patient population. Preoperative patient care for bariatric surgery requires multidisciplinary involvement. Minimizing the risk of perioperative complications that contribute to morbidity and mortality requires comprehensive preoperative evaluation of the patient. Therefore, skilled nursing care is very important for these patients. Critical points in nursing care that are patient safety, comprehensive admission assessment, patient education, careful perioperative care and discharge planning. The aim of this review was to discuss the effect of nursing care in healing process of bariatric surgery patients.

Methods: Studies, compilations and meta-analyses, published between 2000 and 2013 in English and Turkish, were reviewed in this study.

Results: Bariatric surgery is an effective and increasingly common treatment for obesity and obesity related comorbidities. However, quality nursing care and effective patient teaching are essential to achieve positive patient outcomes. Early recognition of perioperative complications and education of the patient including drinking/eating, caring for drainage tubes, skin and wound care, ambulation, self-care and signs and symptoms that require medical attention, can decrease morbidity and mortality.

Conclusion: Patients may seek severe adverse effects and complications have occurs as a result of the bariatric procedure. Perioperative nurses must be knowledgeable about how to care for bariatric surgery patients.

P.044 Gastric Obstruction After Laparoscopic Sleeve Gastrectomy: A Rare Complication

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Laparoscopic sleeve gastrectomy is one of procedures for morbid obesity, which is a safe and reproducible. The common complications about laparoscopic sleeve gastrectomy are post-operative bleeding and leakage. Other complications of post-sleeve gastrectomy are gastro-esophageal reflux and volvulus. Additional fixation between gastric tube and pancreatic capsule or greater omentum would be performed by some surgeon to decrease the incidence of gastro-esophageal reflux and volvulus.

We present a rare complication about gastric obstruction. This patient received the operation of laparoscopic sleeve gastrectomy. We placed panendoscopy for lumen guide during operation. We then fixed sleeve tube to pancreatic capsule for preventing gastric volvulus. Before we finished the operation, panendoscopy was checked again for the lumen and axis. On post-operative 2 days, upper GI series revealed total obstruction of gastric lumen. The final diagnosis was made by the second laparoscopic examination, revealing gastric twist. After we removed additional fixation, the lumen obstruction resolved and intra-operatively panendoscopy showed no more obstruction.

P.045 Intra-gastric Balloon Increases Safety of Bariatric Surgery

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Introduction: High BMI is associated with high risk of bariatric surgery mortality [1]. IFSO suggest new bariatric centres avoid super obese patients for 1–2 years. We present our experience of BioEnterics intra-gastric balloon (BIB) to facilitate preoperative weight loss in super super morbid obese (BMI >60) patients.

Method: Patients with BMI >60 were offered BIB before surgery and were identified from a prospectively collected database. Data available by March 2013 were analysed.

Results: Between October 2011 and March 2013 25 BIB placements were undertaken. Median age was 48 years (range 27–62 years). Median BMI at insertion was 59.8Kg/m² (40–75). Planned balloon removal in 17 patients after median 6 months (range 3–7), one balloon removed early (patient intolerance). 8 balloons in-situ at time of analysis. Four patients had not been followed up yet so no weight loss information was available. Median weight loss was 21.4Kg (range 5–45), eight patients lost > 30Kg. Median BMI loss was 6.8Kg/m² (range 1–13). Progress following balloon removal: sleeve gastrectomy (n=6), gastric bypass (n=1), awaiting surgery (n=6), surgery deferred due to cancer diagnosis (n=2) & discharged due to lack of lifestyle change (n=2). No postoperative morbidity or mortality.

Conclusions: Daycase BIB can be safely placed without general anaesthesia and facilitate weight loss prior to definitive surgery [2].

Obesity is a growing issue, increasing the need for effective minimally invasive techniques [3]. 45kg weight loss in 6 months after placement makes it a very good option for patients not fit for surgery or with poor general condition.

P.046 Obesity is Associated with a Decreased Expression Of Type 2 5'-Iodothyronine Deiodinase Gene in Adipose Tissue

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Introduction: Thermogenesis constitutes an important part of energy expenditure and its disturbances may contribute to the development of obesity. Type 2 5'-iodothyronine deiodinase catalyzing the conversion of thyroxin to triiodothyronine, is a key enzyme in the regulation of thermogenesis, involved in activation of this process in adipose tissue, and therefore – in the increase of energy expenditure. The aim of the study was to compare the expression of the *DIO2* gene (encoding type 2 5'-iodothyronine deiodinase) in visceral (VAT) and in subcutaneous (SAT) adipose tissues from obese and from normal weight individuals.

Methods: Adipose tissue samples were obtained from 55 obese (BMI>40) patients during bariatric surgery procedures and from 38 control individuals (BMI=20–24). To assess the expression of the *DIO2* gene on mRNA level, real-time PCR was used. The results were performed in duplicate, and normalized against the expression of the *ATCB* gene.

Results: The mean expression of the *DIO2* was significantly lower in the adipose tissues of obese patients than in those of the control group ($P=0.0003$), and the difference concerned both VAT ($P=0.004$) and SAT ($P=0.02$). In obese patients, the mean *DIO2* expression was significantly lower in VAT than in SAT ($P=0.001$). A similar observation regarding adipose tissue subtypes was made in normal-weight individuals ($P=0.04$).

Conclusions: We show that the expression of the *DIO2* gene is significantly lower in visceral adipose tissue of obese individuals compared to slim individuals. We suggest that this might impair thyroid hormone-dependent control of thermogenesis and be one of the molecular mechanisms of obesity.

P.047 Disturbance of Physiological Negative Feedback Between Active Vitamin D and VDR in Adipose Tissue in Obese Subjects

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Introduction: Vitamin D deficiency is common in Central Europe population, especially in obese patients. Sequestration of vitamin D in adipose tissue in obese individuals is hypothetical reason of decreased 25OHvitaminD serum concentration, but changes in vitamin D metabolism locally in adipose

tissue are suspected. We assessed differences in expression of vitamin D metabolizing enzymes and VDR genes in adipose tissues in obese vs slim patients.

Methods: Subcutaneous and visceral adipose tissue samples were collected from: obese subjects (62 patients, BMI 39–68kg/m²) during bariatric surgery (RYGB or VBG) and control group (30 patients, BMI 20–26), undergoing a routine, scheduled surgery procedure. Serum 25OHvitaminD and 1,25(OH)₂vitamin D concentrations were measured by Roche Diagnostics Vitamin D Total Assay and IDS manual immunoassay. Expression of *VDR* and 25O HvitaminD1-hydroxylase gene were measured by *realtime*PCR (AU, arbitrary units).

Results: There was a significant statistical difference between expression of *VDR* in obese vs slim individuals in subcutaneous fat (median 5.38AU vs median 1.50AU, respectively), and in visceral fat (median 3.95AU vs. 1.92AU, respectively; $p<0.01$). There was no differences between expression of 25OHvitaminD1hydroxylase gene in obese vs slim in visceral fat (median 1.13AU vs. 1.37AU, respectively) and in subcutaneous fat (median 1.34AU vs 1.30AU, respectively). We observed strong negative correlation between serum 1,25O HvitaminD and *VDR* expression ($R=0.8$) in visceral and subcutaneous adipose tissue in slim, but not in obese subjects.

Conclusions: In obese patients we observed significant disturbance of the physiological negative feedback between most active vitamin D metabolite and its receptor in subcutaneous and visceral adipose tissue.

P.048 Homocystein a Risk Factor for Coronary Artery Disease Case-control Study in West Population of Algeria

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Introduction: The Homocysteine is an amino acid derived from methionine metabolism. Its concentration in plasma depends on many factors, including folate status vitamins B12, B6 and genetic defects affecting one of the enzymes involved in its metabolism. This research was carried out to assess the relationship between elevated plasma homocysteine (Hcy) and the risk of developing coronary artery disease (CAD).

Method : In this work a case-control study was conducted in coronary patients aged between 32 and 80 years ($n = 51$, M / W 37/14) admitted in service of Cardiology EHU Oran, and 56 healthy subjects taken as controls were recruited from general population. Subjects with coronary syndromes and / or expressing one or more cardiovascular risk factors (CRDF): hypertension, diabetes, hypercholesterolemia were included in our study. People with kidney disease and patients with thyroid dysfunction were excluded. Blood samples were performed on EDTA tubes, the plasma levels of lipids (total cholesterol, LDL-cholesterol and triglycerides) and fasting glucose were measured by enzymatic methods. Homocysteine was measured using an enzyme immunoassay ELISA competitive (enzyme-linked immunosorbent assay)

Results: The results demonstrated highly significant differences in homocysteine concentrations between CAD patients and controls ($13,89 \pm 6,73 \mu\text{mol/L}$ versus $6,21 \pm 2,30$; $p < 0,001$)

Conclusion: We can conclude that coronary disease is highly associated with homocysteine levels in the population studied. It follows that homocysteine is an independent risk factor for coronary disease.

P.049 Early Postoperative Changes of HDL Subfraction Profile and HDL Associated Enzymes After Laparoscopic Sleeve Gastrectomy

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Introduction: This study aimed to determine early postoperative changes of LDL/HDL subfraction profile and HDL associated enzymes following laparoscopic sleeve gastrectomy (LSG).

Method: Thirteen obese patients (mean BMI: $52.74 \pm 10.97 \text{ kg/m}^2$) underwent LSG and normal weight control patients (mean BMI: $23.56 \pm 1.92 \text{ kg/m}^2$) underwent laparoscopic abdominal surgery. Fasting blood samples were collected prior to surgery, at day 1 after surgery and after postoperation oral feeding. LDL and HDL subfraction analysis was done by continuous disc polyacrylamide gel electrophoresis. Plasma levels of cholesteryl ester transfer protein (CETP), lecithin-cholesterol acyltransferase (LCAT) and apolipoprotein A-1 (apoA-I) were determined by enzyme-linked immunosorbent assay (ELISA). Measurement of CETP and LCAT activity was performed via fluorometric analysis.

Results: LDL subfraction profile showed no change in both LSG and control group patients. No significant difference was observed in HDL-cholesterol, HDL-subfraction distribution and apoA-I levels in the control group. LSG patients showed a significant increase in HDL-large and a significant decrease in HDL-small fractions at postoperation day 1 compared to preoperation. HDL cholesterol significantly decreased and apoA-I significantly increased in LSG patients after postoperation oral feeding compared to both preoperation and postoperation day 1. Changes in HDL subfraction profile at postoperation day 1 after LSG was accompanied by a significant decrease in CETP protein, LCAT protein and LCAT activity as compared to preoperation levels.

Conclusion: Early changes in HDL subfraction profile and HDL associated enzymes following LSG suggests that the surgical procedure, irrespective of changes in body weight, affects reverse cholesterol transport.

P.050 Parasitic Diseases Diagnosed In Immunocompromised Patients at Annaba, Algeria

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Introduction: The states of immunodepression are more and more numerous and varied. They are often complicated by opportunistic infections in particular parasitic infectious which responsible agents are mainly protozoa.

Objective: The aim of this study is to evaluate the frequency of parasitic diseases in immunocompromised patients diagnosed in the laboratory of Parasitology-Mycology of the CHU Annaba.

Materials and Methods: This is a prospective study ranging from January 2008 to December 2012 and based on the study of various samples of immunocompromised according to a diagnostic procedure that includes specific technical as Ziehl Neelsen staining modified and sero-immunological diagnosis by indirect immunofluorescence, ELISA and Western blotting.

Results and discussion: The authors report the prevalence of visceral leishmaniasis cases, toxoplasmosis and cryptosporidiosis and the undeniable contribution of western blot. Leishmania serology was positive in 24.28% of HIV+ and toxoplasma serology positive in 35% of cases.

Conclusion: parasitic opportunistic infections are often characterized by atypical clinical manifestations hence the necessity of biological evidence to prove the affection, and this in a context of collaboration between parasitologists and clinicians therapists for better management of immunocompromised patients.

P.051 Changes in Gut Hormone Profile Following RYGB. Systematic Review

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Introduction: This systematic review was conducted to evaluate the evidence for changes in metabolic outcomes following Roux-En-Y gastric bypass surgery in obese patients, specifically changes in glucose homeostasis and GLP-1 as well as other gut hormone profile.

Methods: MEDLINE (from 1952), EMBASE (from 1980) and the Cochrane Library were searched. Studies that reported the metabolic outcomes of patients undergoing Roux-En-Y gastric bypass (RYGB) surgery were reviewed. Only studies with more than 10 participants in the intervention group were considered.

Results: From 753 retrieved abstracts, 24 studies of interest that reported metabolic outcomes were identified. A total of 527 participants, 338 of whom underwent surgery, were included. Metabolic outcomes were reported up to 3 years post-operatively: Fasting and peak glucose decreased significantly in 13/16 studies. HbA1c showed a significant reduction in 4/4 studies. HOMA-IR decreased significantly, reflecting a rise in insulin sensitivity, in all 12 studies. PYY levels were significantly increased in 9/11 studies but there was no significant difference in Ghrelin levels in 7/10 studies. Post-prandial GLP-1 levels were significantly raised in 21/21 studies. 12 studies concluded that improvement of glucose homeostasis, insulin sensitivity and diabetes remission is directly associated with gastric bypass surgery rather than weight loss.

Conclusion: Patients who have undergone RYGB surgery have improved metabolic outcomes post-operatively. Consideration of RYGB bariatric surgery as an alternative treatment for obesity and type 2 diabetes resistant to medical management would be prudent as the complications arising from these conditions are costly.

P.052 Impact on Energy Expenditure and Caloric Intake in an Experimental Model of Duodenal Exclusion

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Introduction: We analyze the technique of duodenal exclusion as example of metabolic surgery. We analyze changes on daily intake and expenditure energy (EE) measured by indirect calorimetry.

Methods: Sprague–Dawley rats. Cafeteria diet: 4 weeks, Surgical Intervention / Sham and Sacrifice in 4 weeks. 4 experimental groups: non obese n = 15 (surgery and sham) and obese by cafeteria diet n = 15 (surgery and sham). Intervention: duodenal exclusion. Daily control of weight, intake, and indirect calorimetry for determine basal energy expenditure (EE) before and after surgery. Results: In the no obese animals, there are significant changes in the subgroup intervention with a decrease of 20% of caloric consumption. Obese group: in intervention group there is a significant decrease in caloric intake at the expense of an increase in feed intake (mean increase $8.5 \pm 3 \text{ gr / rat}$, equivalent to 30% of the intake) and a decrease in consumption of cafeteria diet (mean decrease of $6.7 \pm 2 \text{ gr / rat}$). Paradoxically, a decrease in EE was observed in duodenal exclusion more significant in non-obese animals. Duodenal exclusion normalizes blood glucose.

Conclusions: In non-obese animals, changes are transient, and no effect was observed at the end of experiment. In obese animals, a significant decrease of the intake is maintained throughout the experiment. This suggests that the surgical technique can influence the EE, but intake and changes of appetite are a potent regulator of thermogenesis.

P.053 Type 1 Diabetes Does Not Alter Peroxynitrite Levels Despite the Increase on Neuronal Nitric Oxide and Superoxide Anions Synthesis

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Introduction: Nitroergic innervation is pivotal in mesenteric blood flow control. Diabetes induces vascular complications associated with increased oxidative stress and peroxynitrites (ONOO⁻) synthesis. However, Joslin Medalist Study suggests the existence of endogenous protective factors on type 1 diabetes. We analyzed the possible modulation of toxic ONOO⁻ synthesis on diabetes.

Methods: De-endothelized segments from control and streptozotocin-induced diabetic rats (55mg/kg; 8 weeks) were used. The effect of L-NAME (0.1mM), and AMT (5 nM) on electrical field stimulation (EFS)-induced vasoconstriction, and the vasodilation to nitric oxide (NO) donor, DEA-NO, were analysed. NO⁺ release in presence and absence of specific neuronal NO synthase inhibitor 7-NI (0.1 mM) was measured. Superoxide anion (O₂⁻) and ONOO⁻ levels were also determined.

Results: L-NAME increased EFS vasoconstriction in both experimental groups, but to a greater extent in segments from diabetic rats. AMT did not alter EFS vasoconstriction. DEA-NO-induced vasodilation was similar in both experimental groups. 7-IN practically abolished EFS-induced NO release. NO and O₂⁻ productions were significantly increased, while ONOO⁻ synthesis was not modified by diabetes.

Conclusions: EFS induced neuronal NO release from nitroergic innervation through neuronal NO synthase. Type 1 diabetes increases NO and O₂⁻ levels meanwhile does not alter ONOO⁻ synthesis, indicating that the toxic ONOO⁻ synthesis is limited. These results suggest that O₂⁻ could be implicated in another metabolic route limiting ONOO⁻ synthesis, contributing to the maintenance of nitroergic innervation function in diabetes.

P.054 Investigation of the Effects of RYGB Surgery on the Intensity and Consummatory Reward Value of Combined Fat and Sweet Taste

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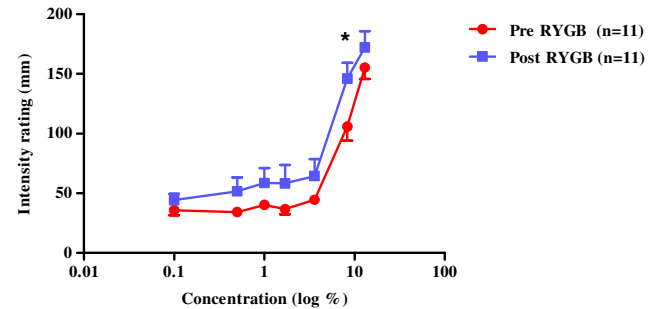
Introduction: Bariatric surgery is the most effective treatment for obesity. After gastric bypass surgery (RYGB), patients and animal models show a decreased preference for sweet and fatty foods. The underlying mechanism may include alterations in taste function.

Method: 11 obese patients (8 female, 3 male) due to undergo RYGB, aged 46.4±4.8 years, BMI of 42.7±1.7 kg/m², were tested 2weeks before and 10weeks after surgery and 14 obese patients (10 female, 4 male) aged 44.4±3.9 years, BMI of 43.6±0.4kg/m² were tested before and 2weeks after a very-low-calorie diet (VLCD) of 800–1000 kCal/day.

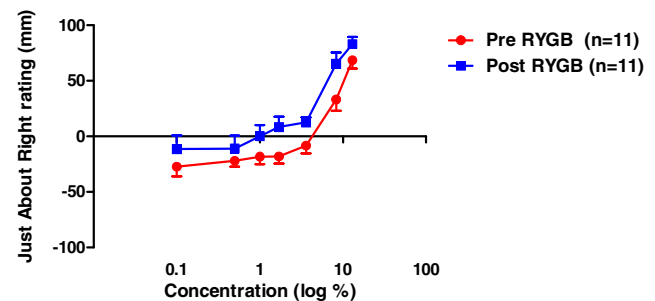
Each participant taste sampled 7 milk/cream solutions with varying fat concentrations but the same sucrose content (0.68g), in 3 trials using the sip and spit technique. Visual-Analogue-Scales (VAS) were used to rate the intensity and 'just about right' (JAR) concentration of fat. The JAR scale was anchored with "too fatty/creamy, I would never drink it", "not at all fatty/creamy, I would never drink it", with the ideal 'Just Right' in the middle of the scale.

Results: After intervention, the intensity of fat/sweet mixtures increased significantly but similarly in both groups (p=0.87 between groups). However, JAR ratings decreased significantly only in the RYGB group (p=0.005 between groups), in that the JAR concentration shifted from a fat concentration of 4.5% to 1.0%.

Conclusions: RYGB and VLCD both affected the sensory domain of taste, but the consummatory reward from fat and sweet was only reduced in RYGB patients. This mechanism may in part explain the healthier food preferences observed after RYGB.



Graph 1: Intensity ratings as a function of the 7 concentrations of fat and sweet in obese bypass (RYGB) pre vs. post treatment



Graph 2: Just About Right ratings as a function of the 7 concentrations of fat and sweet in obese bypass (RYGB) pre vs. post treatment

P.055 The Influence of Body Adiposity Index on Functional Capacity of Morbidly Obese Women

PRESENTER: D. Costa¹

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Introduction: Obesity causes an increase in workload for a given exercise and therefore probably obese individuals have lower functional capacity. However, there are few studies that demonstrate the relationship between body adiposity index (BAI) and functional capacity, considering that this measure is a more reliable alternative for measuring body fat than body mass index (BMI), used more often.

Objective: To evaluate the functional capacity of morbidly obese women and correlate it with the BAI and BMI.

Methods: It was evaluated 15 morbidly obese women, aged between 35 and 53 years and BMI 48,27,10 ± 6.85 kg/m². With the aid of a measuring tape were measured height and hip circumference of patients for calculating the IAC by the formula: [Hip / (height x height-18)]. Functional capacity was assessed using the Shuttle Walk Test (SWT).

Results: It was observed a significant reduction in functional capacity verified by the shorter distance of all patients (301.25 ± 71.24 m) compared with the predicted values (427.37 ± 62.77 m). Furthermore, there was a high and negative correlation between the IAC and the walking distance (r = 0.8281,

$p = 0.0003$) and a moderate and negative correlation between the BMI and the walking distance ($r = 0.5656$, $p = 0.035$)

Conclusion: Morbid obesity decreases the functional capacity and this is mainly influenced by the body adiposity index.

P.056 Comparison of Respiratory Muscle Strength in Diabetic and Nondiabetic Obese Women

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Introduction: Diabetes is a disease that can develop several complications such as muscle problems. When obesity and diabetes are combined they can maximize the damage to peripheral and respiratory muscle function.

Objective: To compare respiratory muscle strength in diabetic and nondiabetic obese women.

METHODS: It was evaluated 38 morbidly obese women (BMI > 40 kg/m²), aged between 20 and 50 years, sedentary, nonsmokers without respiratory disease and of these, 18 were diabetic and the other 20 were nondiabetic. It was recorded age, weight, height and waist and hip circumference. Respiratory muscle strength was evaluated by measuring the maximal static respiratory pressures - maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP) - expressed by absolute values and percentage values predicted.

Results: The diabetic and nondiabetic obese women were similar with respect to age (39.55 ± 9.69 vs 35.15 ± 5:39 years), BMI (43.45 ± 2.56 vs 43.26 ± 2:44 kg/m²) and waist / hip ratio (0.92 ± 0.07 vs 0.91 ± 12:08). Respiratory muscle strength, was lower in patients with diabetes, for absolute values (MIP = 77.77 ± 22.89 vs 92.51 ± 19.96 cmH₂O and MEP = 92.22 ± 22.11 vs 111.51 ± 36.16 cm H₂O, $p < 0.05$) and for the percentage of predicted values (MIP = 85.19 ± 23.66 vs 99.25 ± 21:36 and MEP = 100.33 ± 21.76 vs. 118.36 ± 38.21, $p < 0.05$).

Conclusions: The diabetic obese women have respiratory muscle strength lower than nondiabetic obese women, demonstrating that diabetes impairs the respiratory muscle strength in obese women.

P.057 Vitamin D, Calcium and Parathormone levels in Obese Singaporeans

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Introduction: In obese subjects, Vitamin D and BMI have an inverse relationship. This is not linear but variable. There has been no report of bone health parameters of the obese in multi-ethnic Singapore. We measured certain bone health parameters in a group of morbidly obese individuals referred for bariatric surgery.

Method: We prospectively collected data from a total of 32 obese Singaporean referred for Bariatric surgery. Each subject has blood taken for 25 hydroxy Vitamin D, Calcium, Albumin, Parathormone, Phosphate and c-Telopeptide. A DEXA scan was carried out. Anthropometric measurement was taken as well as detail body composition.

Result: 32 subjects were recruited. There were 12 Malays, 9 Indians, 9 Chinese, and 2 others. All subjects recorded normal and corrected serum

Calcium and Phosphate. There was only one subject whose Vitamin D level was recorded as normal (above 30). 7 of these recorded a Vitamin D level of < 10, with lowest recorded was 1.79. 8 subjects have recorded Vitamin D level at 10–20. There were 4 recorded cases of raised parathormone levels. Of these 4, two had normal or near normal Vitamin D levels, one was below 5, and the other one at 11. The one with the lowest recorded Vitamin D of 1.79, had normal parathormone level. The relationship between BMI and Vitamin D level was not linear.

Conclusion: Very low Vitamin D levels were recorded in this cohort of racially mixed Singaporeans. The numbers collected is too small to reach any conclusion. We are now analysing the other bone health parameters, as well as extending the collection to those who are merely overweight to see if the same applies.

P.058 Learning Curve and Technical Aspects of Gastric Bypass in Experimental Animal Model

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Introduction: Actually obesity evolving likes one of the major health problems. Only the bariatric surgery has proved a long-term efficacy in weight loss and in the treatment of comorbidity. With the development of surgical animal model we try to elucidate the mechanism of this global positive effect of the surgery
Materials and methods: Two groups of male Wistar was enrolled in this study In the first thirty one a normal chow diet were offered for four months in the second group of twenty five a high fat diet were offered for the same period of time After anesthesia and laparotomy, a gastric bypass, were performed. A group of rats underwent sham surgery.

Surgery duration, anesthesia complication, postoperative complications were carefully noted. Three weeks after surgery radiographic shallow study and OGTT was performed in selected animals.

Results: Globally 25% of mortality was observed. There was not a statistically significant difference between the NSD and the HF diet group. There is a clear increasing of the efficacy with the training. After twenty bypass the mortality achieve the 10% and the operative time decreased in 44 min. The images of the radiographic shallow study are presented. We observed a surgery effect in the weight curve and in the OGTT of the normal chow diet group also.

Conclusion: Animal models can be a powerful research instrument in the study of morbid obesity. We present our experience and we discuss the technical aspect for the gastric bypass.

P.059 Learning Curve and Technical Aspects of Sleeve Gastrectomy in Experimental Animal Model

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Introduction: Actually obesity evolving likes one of the major health problems. Only the bariatric surgery has proved a long-term efficacy in weight loss and in the treatment of comorbidity. With the development of surgical animal model we try to elucidate the mechanism of this global positive effect of the surgery

Materials and methods: Two groups of male Wistar was enrolled in this study In the first fifty eight a normal chow diet were offered for four months in the second group of twenty nine a high – fat diet were offered for the same period of time After anesthesia and laparotomy, sleeve gastrectomy, were

performed. A group of rats underwent sham surgery. Surgery duration, anesthesia complication, postoperative complication was carefully noted. Three weeks after surgery radiographic shallow study and OGTT was performed in selected animals.

Results: Globally 11% of mortality was observed. There was not a statistically significant difference between the NSD and the HF diet group. There is a clear increasing of the efficacy with the training. After thirty fifty sleeve the mortality achieve the 3% and the operative time decreased in 13 min. One leak was discovered after radiographic shallow study. We observed a surgery effect in the weight curve and in the OGTT of the normal chow diet group also.

Conclusion: Animal models can be a powerful research instrument in the study of morbid obesity. We present our experience and we discuss the technical aspect for the sleeve gastrectomy

P.060 Changes in Chemerin, Leptin and Ghrelin Levels After Bariatric Surgery: Roux-En-Y Gastric Bypass (RYGB) vs Sleeve Gastrectomy (SG)

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Introduction: The aim of our study is to determine the levels of Leptin, Ghrelin and Chemerin in morbidly obese patients before and after weight loss due to the action of two different bariatric surgeries: Roux-en-Y Gastric Bypass (RYGB) and Sleeve Gastrectomy (SG).

Methods: We examined the levels of Ghrelin, Leptin and circulating Chemerin in 30 women with morbid obesity (MO) (BMI > 40 kg/m²) (n = 17 SV / RYGB n = 13), and 60 control women (BMI < 25 kg/m²) Breakpoints study: at the time of surgery, at 6 and 12 months after surgery.

Results: Preoperative levels of Leptin and Chemerin are significantly higher in the MO compared to controls. Ghrelin is lower respect to controls. Leptin and Chemerin levels in MO decreased significantly after 6 and 12 months of surgery (p < 0.05). Ghrelin levels increase significantly at 12 months after surgery (p < 0.001). Leptin levels at 12 months after surgery were significantly higher in the SG group (76.44 (± 27.71)) than in BPGY group (48.85 (± 23.78)) (p < 0.05). No differences between two types of surgery on Ghrelin or Chemerin levels are reported.

Conclusions: Longitudinal changes in Ghrelin levels and Chemerin unrelated to the type of surgery, but with reduced weight after surgery. Postoperative Ghrelin levels are situated at the same levels as the non-obese patients (possible feedback regulation and / or extragastric synthesis). Leptin changes may be due to the strong association with the fat mass, since patients with higher BMIs are those that have undergone a SG.

P.061 Efficacy and Satisfaction Level of Intra-gastric Balloon Among Patients in Kuwait

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Introduction: Traditional methods of treating obesity have shown only limited efficacy. Intra-gastric balloon (BIB) is considered a new potential alternative

method in the management of obesity. There is limited information in the literature about the outcome of BIB. This study examined the efficacy and satisfaction of BIB in obese patients in Al-Amiri Hospital in Kuwait.

Method: A retrospective review of BIB in patients from October 2009 through December 2013 at Al-Amiri Hospital, Kuwait, included 179 patients. Weight loss, complications, satisfaction level, and weight gain after removal of the patients was assessed. The weight loss was analyzed further according to different demographic groups.

Results: A total of 179 patients were included in the study. Their data was collected, and the pre-insertion and post-removal body mass index (BMI) were calculated. Before insertion of the BIB, there was a mean weight of 99.7 kg (SD, 26.7); after removal they showed a mean weight of 88.9 kg (SD, 25). There was a mean weight loss of 10.9 kg (SD, 8). The patients experienced a median excess weight loss (EWL) of 38.5%. There was no significant variation in the weight loss according to age, gender, and nationality. There was a satisfaction level of 44% among the patients. Weight gain after removal was experienced by 34.7% of patients.

Conclusion: BIB seems to be an effective method of significant weight reduction with little complications, making it a good alternative in the management of obesity.

P.062 Implantation of the Spatz 3 Adjustable Balloon System Without Guidewire and Pusher

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¹³Trafford General Hospital, Gastroenterology, Manchester-United Kingdom

¹⁴Dyanand Medical College Hospital, Gastroenterology Ludhiana-India

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Introduction: The Spatz 3 Adjustable Balloon utilizes an insertion facilitator for implantation. The facilitator is a tubular silicone sleeve that is fitted on to the end of the endoscope which forms a pocket into which the distal 2 cm of the balloon fits. The endoscope then pulls the balloon passively into the stomach. The balloon comes fitted with a pusher and guidewire which help stabilize the device during the insertion procedure. However, given the stability of the balloon within the insertion facilitator, the pusher and guidewire appeared to be superfluous. Insertion utilizing the insertion facilitator, but without the pusher and guidewire was performed.

Method: Utilizing the aid of the insertion facilitator, 22 endoscopists implanted 35 patients in 12 medical centers with the Spatz 3 Adjustable Balloon System without the guidewire and pusher. Upon entry into the antrum the endoscope was retroflexed to confirm position of the balloon below the GE-junction. Following inflation with 200 ml, the endoscope was pulled back to the GE-jct to confirm separation of the balloon from the endoscope. The balloon was then fully inflated to 500 ml.

Results: All 25 devices implanted without difficulty. Patients tolerated the procedure well. Procedure times ranged from 7–10 minutes.

Conclusion: Safe implantation can be performed with the insertion facilitator, without the guidewire and pusher. This can reduce device preparation time and procedure time. The device without guidewire and pusher is less bulky and should diminish patient discomfort

P.063 Intra-gastric Balloon Treatment of Obesity Before Bariatric Surgery

PRESENTER: O. Karagulle¹

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Introduction: Intra-gastric balloon is a effective but insufficient and temporary therapeutic modality for obesity treatment. This study aimed to evaluate the effect of intra-gastric balloon on before Sleeve gastrectomy or gastrik plication.

Method: Thirty-five patients (9 male, 26female) who selected intra-gastric balloon method for weight loss before bariatric surgery were included in the study. Their mean age was 38.3±14.7 and mean body mass index was 47.9 ±20.1kg/m². Four Patients who had contraindication for endoscopic intra-gastric balloon placement were excluded.(1 female, 3 male) intra-gastric balloon was performed under deep sedation with propofol. 26 patients completed the six-month period. There were no complications in any patient. Three patients (3 women) in the third month intra gastic balloon was removed due to pain. One patient (male) in the first month was removed due to the pain and vomiting. In this study, patients followed by the application of an intra-gastric balloon in the first and sixth months of BMI status was made. At the end of 6 months, patients body mass index were studied for download under 45 kg/m² for bariatric surgery.

Results: Twenty-six patients completed the initial phase. At the end of the initial one months, the mean body mass index was 1.7±0.3kg/m² and mean excess weight loss was 5.3±1.1 kg. At the end of the initial six months, the mean body mass index was 14.4±1.6kg/m² and mean excess weight loss was 7.2±1.4 kg.

Conclusion: The treatment of morbid obesity by intra-gastric balloon placement must be prepare method before bariatric surgery procedure. In this study, 5 patients with BMI over 45 kg/m² at the end of the sixth month fell below BMI 45kg/m². Thus, for bariatric surgery patients gained more dynamic body condition. Losing weight by intra-gastric balloon before bariatric surgery will improve the morbidity and mortality rates of this modality

P.064 Peptic Ulcer; A Possible Complication of Adjustable Gastric Balloon

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Introduction: Intra-gastric balloon is a less invasive and reversible method compared to surgical intervention for obesity treatment. In this article we aim to present a case that adjustable intra-gastric balloon cause to peptic ulcer.

Case: 45 year-old female patient could not success weight loss with diet and exercise. She weighs 184kg and 1.65cm tall, her BMI is calculated as 67.4kg/m². The patient is informed about the alternative surgical methods. Laparoscopic sleeve gastrectomy procedure is chosen. In order to reduce surgical morbidity, ingastric balloon will be implemented. Nothing has detected during patient's endoscopic check. The adjustable ingastric balloon was performed and inflated with 700cc methylene blue solution. Consequently, the patient lost a total of 38kg with the first 18kg by the end of first month. After 5 months she began to experience short episodes of severe epigastric pain,nausea and vomiting, which were related to food intake . Upper

endoscopy revealed that the intra-gastric device had completely migrated into the pylor, occluding its lumen by instruments of gastric balloon. Endoscopic treatment has been utilized. As a result of another attack on the 6th month endoscopic procedure was followed. A mechanical ulcer measured approximately 2 cm diameter in the incisura angularis were diagnosed by decubitis, and the device was removed by endoscopy. Medical treatment started for ulcer, after 2 months of treatment, recovery from ulser has been observed during endoscopy. Nevertheless in the meantime the patient put on 15kg in spite of dietary treatment. **Discussion:** Although adjustable intra-gastric balloon is a safe and effective method for obesity treatment the successful results seems temporary. As soon as the balloon is removed, rapid weight gain starts. The most common complications resulting intra-gastric balloon implementation are nausea, vomiting and stomachache. Vomiting can be controlled by avoiding oral intake and medical treatment. However vomiting could be unresponsive to treatment. If that is the case, the balloon has to be removed. Other rare complications could be listed as peptic ulcer, esophagitis, gastroesophageal reflux, gastrointestinal bleeding, pancreatitis, esophageal perforation, gastric perforation .One of the late complications is deflation and/or dislocation of the balloon leading bowel obstruction. In our case we have twice observed temporary stomach outlet obstruction caused by displacement of balloon's instruments. This was cured through endoscopy. Finally the balloon had been removed in consequence of ulcer developing at incisura angularis.

Conclusion: Endoscopic placement of an intra-gastric balloon in obese patients is a nonsurgical intervention that allows for effective weight loss, without excessive risk of complications.

P.065 Early Results of Endoscopic Intra-gastric Balloon; Our Experience

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Introduction: Obesity is a major health problem causing morbidity and mortality. One of the commonly performed non-surgical treatment is intra-gastric baloon. In this study we aimed to evaluate the early results of patients who underwent intra-gastric balon procedure.

Method: 19 patients were analysed (12 female, 7 male) in this study. Intra-gastric balloon were placed to eight superobese patients for weight reduction before planned surgery. Process was performed under sedation. Patiets were discharged with 1000 kcal/day diet for 6 months.

Results: Initial mean BMI was 53.2kg/m² (between 43.9 and 63.7) and average weight was 146.4 kg (between 108–206). Two patients showed intolerance and resulted balloon removal. At the end of the 6 months average of 17 patients' BMI was 45.7kg/m², and average body weight was 123.6kg.

Conclusion: Intra-gastric balloon method in obese patients is effective and safe way for weight loss.

P.066 Air- and Liquid-filled Intra-gastric Balloons in Treatment of Obese and Super-Obese Patients

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Introduction: The indications, clinical effect, difficulties and complications of the air-filled (AF) (Heliosphere, France) and liquid-filled (LF) Bioenterics intragastric balloons (IGB) (BIB or Allergan, CA, USA) were studied for the weight loss in obese and super-obese patients.

Method: 207 obese and super-obese patients were treated with liquid-filled BIB (124), Allergan (15) and air-filled (68) IGB. Average BMI was $46.1 \pm 3.3 \text{ kg/m}^2$. IGB placement and extraction were performed under general anesthesia. Indications for IGB placement were: - unsatisfactory results after diet therapies; -patient's request and/or doctor's decision for non-operative treatment; - preoperative weight loss in obese patients before bariatric or cosmetic surgery; -super-obese patients with high risk for surgery. Balloons were extracted, in average, after 198 ± 4.9 days. In five patients IGB were extracted after much longer, that manufacturer's recommended time (16–24 months).

Results: Average preoperative weight loss was $16.8 \pm 3.1 \text{ kg}$, average BMI decrease was $5.0 \pm 3.7 \text{ kg/m}^2$, and average excess weight loss was 26.4%. Complications and difficulties: 1) mild erosions of gastric mucosa 12 (11 with LF and 1 patient with AF IGB); 2) nausea and/or vomiting and heaviness in epigastria 28 (26 with LF BIB and 2 with AF) patients; 3) earlier IGB extraction 2 (LF); 4) no possibility to insert the IGB- 1 (very short neck and small mouth); 5) no possibility of the IGB retrieving - 1 (IGB was removed through the gastrotomy during bariatric operation); 6) did not loose weight at all 9 patients, who did not follow the program accurately. There were no deaths, full spontaneous deflation or moving IGB from stomach to the bowel.

Conclusion: The AF and LF IGB use was safe and successful procedure in weight loss in obese and super-obese patients. The AF IGB had equivalent efficacy on weight loss and demonstrated a better patient's tolerance and less complications rate compare to a liquid-filled balloons. The motivation, changing eating habits and accurate following the program - are the ways to successful weight loss.

P.067 Intra Gastric Preoperative Balloon in Super Obese Patients

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Introduction: Obesity surgery is accompanied by postoperative complications and presents mortality rates ranging from 0.5% to 3%.The higher the body mass index (BMI), the greater the risk of complications and mortality. In order to reduce these undesirable effects, it is recommended to induce weight loss preoperatively, especially in cases of super obese, with a BMI > 55 kg/m² and comorbidities. The purpose of this presentation is to analyze the progress and results of immediate postoperative patients in whom weight reduction preoperatively was induced by placement of intra-gastric balloon.

Material and Methods: Four super obese male patients, with a BMI ranging from 57 to 65.96 kg/m², aged 20 to 67 years, were submitted to pre-op wheight reduction utilizing a gastric baloon. All patients showed weight reduction ranging from 20% to 28.8%, when compared to the initial weight. Subsequently they underwent to surgery performing a sleeve gastrectomy without postoperative complications.

Conclusion: The use of intra gastric ballon preoperatively in super obese patients is a valid method to induce weight loss, showing high rate of weight loss and helping to reduce postoperative complications.

P.068 A New Algorithm to Treat Common Bile Duct Stones After Gastric Bypass: The Role of PTC

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Introduction: common bile duct (CBD) lithiasis can represent a challenge following gastric bypass surgery, since the endoscopic treatment with sphinterotomy (ERCP) is not possible because of the Roux-en-Y reconstruction. Alternative approaches include invasive procedures such as the laparoscopic assisted transgastric ERCP, the CBD surgical clearance or the double balloon enteroscopy. We propose an algorithm for treating symptomatic CBD stones following RYGB, based upon our experience with percutaneous transhepatic cholangiography (PTC) under local anesthesia.

Methods: a 59 year-old female who underwent a laparoscopic RYGB in 2009 followed by laparoscopic cholecystectomy in 2012, complained of intermittent epigastric pain and derangement of liver function tests with increased bilirubin, a few months after gallbladder surgery. A magnetic-resonance-cholangiography confirmed the presence of stones in the distal CBD, with duct dilatation. A PTC through a right-sided segmental duct was undertaken under local anesthesia. A balloon was used to dilate the Oddi sphincter up to 9 mm to allow the progression of the stone through the sphincter.

Results: the success of the procedure was confirmed by the relief of symptoms and normalization of blood tests and CBD size. The hospital stay was uneventful. A surgical procedure was avoided in this case. **Conclusion:** PTC should be included in the algorithm for treating CBD stones post gastric bypass especially for high risk patients. Bariatric surgeons should be aware about the management options and the possibility to involve the interventional radiologist in this clinical scenario.

P.069 Potential Effect of Combination Therapy by Exenatide, Metformin, and Pioglitazone on Adiposity Syndromes That Surgery Is Not Approved For

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Introduction: There are controversies around the optimal treatment to those for whom bariatric surgery is not effective or indicated, and some recent reports suggest benefit of GLP1-receptor agonist (GLP-1) on these subjects with co-administration of insulin sensitizer.

Method: Case analysis

Result: A case of 24 yrs. old woman with Prader-Willi syndrome (PWS), hereditary adiposity syndrome not indicated for bariatric surgery, occurred with diabetes mellitus. Combination therapy with Exenatide (EX) and metformin (MET) was introduced and proved effective in short period. Afterwards, by contrast to a previous report, in which addition of MET(1500mg/day) on EX(10g/day) improved blood glucose, body weight(BW), and visceral fat (VF), however, our case rather showed HbA1c increase (7.4 to 9.1), without change in BW in 3 Months. Moreover, VF to total fat ratio (V/T) increased (18.7 to 23.9) although hepatic transaminases in serum and the abdominal fat (AF cm²) decreased (240 to 219). Then we added pioglitazone (PIO) (30mg/day) attempting to improve a ratio of fat disposition. After 6 months of PIO therapy, in spite of BMI increase, AF and V/T were decreased (219 to 201, 23.9 to 15.9, respectively) accompanied with improvement in HbA1c (9.1 to 7.3), BMI (29 to 31), and transaminase.

Conclusion: PWS was effective and was suggested to be also an indication for those on whom bariatric surgery has failed or is not adopted. This combination, addition of PIO to EX with MET therapy on genetically obese patient, ameliorates visceral obesity, a prominent risk for cardiovascular disease, represented by V/T ratio as well as glucose control.

P.070 Laparoscopic Gastroileal Bypass for Diabetes Treatment in Nonmorbidly Obese Patients

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Background: Since 2000 year we have performed more than 500 laparoscopic biliopancreatic diversion without gastrectomy (LBPD-G) for morbid obesity treatment with excellent results. In 2008 year we began to treat diabetes in nonmorbidly obese patients through LBPD-G with 92% of diabetes resolution. To simplify the technic and avoid steatorrhea we developed the laparoscopic gastrileal bypass.

Methods: Prospective study on oral glucose loads in 73 severe diabetic patients (body mass index [BMI] >30 and <35, HbA1C >7.5%) before and at 1, 3, 6, 12, 18 and 24 months after laparoscopic gastroileal bypass with a horizontal gastric transection and 300 cm gastroenteral anastomosis from ileocecal valve.

Results: Of the 73 patients enrolled, the mean age was 45.6 years, mean BMI was 33.42, mean fasting plasma glucose was 191.6 and mean HbA1C was 8.7. The mean BMI at 1, 3, 6, 12, 18 and 24 months after operation were 30.25, 28.37, 27.32, 26.41, 25.58 and 25.43, respectively. The mean HbA1C at 1, 3, 6, 12, 18 and 24 months after operation were 7.3, 5.9, 5.7, 5.5, 5.7 and 5.6, respectively. Resolution of type 2 diabetes was achieved in 58 patients at 3 months and 69 at 12 months after gastroileal bypass. The mean operating time was 33 minutes, without complications and mortality.

Conclusion: Laparoscopic gastroileal bypass seems to be a promising procedure for the control of T2DM and the metabolic syndrome.

P.071 Biliopancreatic Diversion with Duodenal Switch: The Experience in Ukraine

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Methods: A prospective study of 45 patients with morbid obesity, 22 (48.9%) men and 23 (51.1%) women, mean age 44.8±8.1 years, range 30–63, underwent open BPD-DS from 2010 to 2012. Severity of obesity related comorbidity was evaluated using Ali-Wolfe scale.

Results: Mean preoperative body weight of patients – 158.2±26.7 kg (110–215), mean body mass index – 52.8±7.9 kg/m² (40.1–75.4), mean excessive body weight – 92.1±23.2 (47–141). Arterial hypertension, dyslipidemia, type 2 diabetes mellitus (T2DM), gastroesophageal reflux disease (GERD) were diagnosed preoperatively in 37 (82.2%), 38 (84.4%), 14 (31.1%) and 34 (75.5%) patients respectively. Patients attending follow-up visits at 3 (n=43), 6 (n=40), 12 (n=31) and 24 (n=18) months postoperatively experienced median percent excess weight loss of 27.4%, 60.3%, 79.6% and 87.1%, respectively. Hypertension, dyslipidemia, T2DM, GERD were resolved in 27 (72.9%), 25 (65.8%), 13 (92.8%) and 14 (41.2%) patients with regression of severity of comorbidity (in comparison with preoperative evaluation) from 3.2±0.7, 3.1±0.9, 2.4±1.4, 2.0±0.5 to 0.7±1.6, 0.9±1.2, 0.4±0.9, 0.9±0.9 respectively (p<0,05). There were no major postoperative complications and mortality.

Conclusion: BPD-DS is safe and effective technique to weight loss, resolution of metabolic disorders and comorbidity in patients with morbid obesity.

P.072 SILS-Gastric Banding

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is a simple and effective bariatric intervention.

Materials and Methods: 12 LAGB «SILS +1» were performed from 2010 to 2012. Patients' body mass index (BMI) was 32–39 kg/m², 1 male, 11 female. We used a

«Covidien» 4-channel port, 5 mm 30° extended laparoscope, a standard «Covidien» multifunctional tool set. Multichannel port was placed in the navel and an additional 5-mm trocar in epigastrium.

At first a retractor was introduced through the trocar to remove the left liver lobe, then a flexible retractor for the band passage, and finally a band catheter. In 3 cases, the band was reinforced by serous-muscular stomach suturing with EndoStitch (Polysorb 2/0). The distal catheter was passed to the incision area of the navel through the subcutaneous tissue tunnel formed after the umbilical port removal, and connected to the port. Port was fixed in the navel after the aponeurosis suturing.

Results: The operative time was 35–135 minutes. No early postoperative complications observed. 26 months follow-up revealed weight loss. Average% EWL at 6 and 12 months was 34, 56%, the same as for the standard laparoscopic methods. Patients noted good cosmetic outcomes due to lack of visible scars on the anterior abdominal wall (the post-multichannel port introduction scar is in the navel). One case required band removal after 26 months because of slippage syndrome.

Conclusions: Our first results prove the possibility, safety and efficiency of SILS-gastric banding. This method allows the best cosmetic effect due to intraumbilical incision.

P.073 Changes in the Quality of Life in Patients with Morbid Obesity After Gastric Banding Surgery

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Introduction: Improving quality of life determines the gastric banding (GB) result.

Materials and Methods: GB was performed in 630 patients (mean age 38,5+2.6 years, average BMI 39+3.2 kg/m²). The control group included 50 people with normal weight. GB patients available at 5 years after surgery (n=380) were divided into two groups. First group A (n=240) presented body mass decrease with subsequent stabilization. The second group B (n=140) presented weight loss with subsequent regain. The study was questionnaire-based.

Results: The life quality index (LQI) in the control group was 125,7±6,8 points. LQI in patients with morbid obesity before surgery (n=630) was 76,8 ± 3,25 points (p<0,001). In 5 years after the operation, the LQI in available patients (n=380) was 101,6±4,8 (p <0,001). The group A patients have retained a stable reduced body weight, their LQI was almost similar to healthy individuals (115,3±2,83 points). Group B patients with increased body mass presented an LQI closer to preoperative level (83,13±7,24 points) (p0,05).

Conclusions: The lower the weight, the higher the LQI. LQI level was high in Group A and similar to healthy individuals' level in long-term period after the surgery. Dynamic study of LQI has shown relationship between patient's appearance and quality of life. The better the appearance after obesity reduction and body weight stabilization, the higher the LQI. Therefore, plastic surgery is necessary and of practical importance for the results of obesity treatment.

P.074 Remote Results of Gastric Banding Surgery

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Introduction: Analysis of gastric banding results shows a fairly high efficiency, especially during first years after the operation. In most patients overweight decreases by over 70% and comorbidity manifestations significantly reduce or disappear. Nevertheless, there's evidence of relapses in the late postsurgical period. About 1/4 of patients require repeated surgery.

Materials and Methods: We performed 630 gastric banding from 2006 to 2012 (Patients mean age 38+/-2.6 years). Prior to surgery, average body mass index (BMI) was 39+/-3.2 kg/m². In the late postoperative period, 380 patients were examined (60.3%). Operation effectiveness assessed by criteria: excellent results - weight loss >30%, good 21-30%, satisfactory 15-20%, unsatisfactory - <15%. In addition, the comorbidities frequency evaluated.

Results: In 1–1.5 years after surgery 311 patients (81.8%) had excellent and good results; only 32 patients (8.4%) had poor results. The dramatic change occurs after five years, when the poor results frequency increases almost 4-fold, reaching 42.2%. The analysis of comorbidities revealed that the frequency of hypertension, diabetes, osteoarthritis, respiratory failure during first 1–4 years is greatly reduced. The preoperative frequency of hypertension was 58% and 11% 4 years after, diabetes - 14% and 2.3%, osteoarthritis - 71% and 29.6%, respiratory failure - 56.7% and 15.7%. Pickwick syndrome frequency is reduced by 20 times.

Conclusions: One of the effectiveness criteria is the decline in BMI by 25% and it's stability in 5 years period. Our data at 5 years after surgery show the 25.6% rate, which is considered an acceptable result.

P.075 Slippage-syndrome Prevention After Laparoscopic Adjustable Gastric Banding

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is one of the most effective bariatric operations. Slippage-syndrome is a late specific complication in 2 - 25% of cases.

Materials and Methods: 630 patients were operated from 2006 to 2012. 268 (43%) patients required simultaneous fundoplication for hiatal hernia (Mainly Toupet 270 ± 210 patients). Mean age 38±2.6 (22–62) years, mean body mass index (BMI) 39 ± 3.2 (31–51) kg/m², 171 female, 97 male. Patients were divided into 2 groups (with and without fundoplication). 81% and 70% of patients were available for examination at 1 and 2 years from surgery. The maximum observation term was 42 months. **Results:** Comparative early postoperative period observation gave no significant difference between the groups. The average LAGB operative time 26,8+/-8,3 minutes. Laparoscopic simultaneous operations average time was 39,4+/-8,9 minutes. % EWL (% reduction of excess body weight) at 12, 24, 36 months for both groups were comparable and averaged 76%, 78%, 67%, respectively. Slippage-syndrome diagnosed in 20 cases (3.3%). 11 patients (1.8%) underwent surgery, in 9 (1.5%) cases, a successful conservative treatment conducted. Analysis revealed that slippage-syndrome developed in 17 cases (4.5%) after gastric banding (n = 382), 10 patients were operated (band removed in 5 cases). Notably that slippage-syndrome emerged only in 2 cases (0.75%) after banding with simultaneous fundoplication (n = 268), both were operated (1 band position correction, 1 band removed). (P>0,05)

Conclusions: The analysis shows fewer slippage-syndromes after gastric banding with simultaneous fundoplication.

P.076 Connecting Tube Dehiscence During Abdominoplasty in Patients with Gastric Band

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Introduction: Connecting tube of gastric bands can be damaged during abdominoplasty operation performed by plastic surgeons. Here we present two cases of connecting tube dehiscence as a result of extensive dissection during abdominal wall reconstruction. This problem was corrected laparoscopically in these patients successfully.

Method: Two female patients 32 and 33 years old (44 and 38 initial BMI scores respectively) with the history of laparoscopic gastric banding underwent abdominoplasty operation. The expected weight loss stopped immediately after this operation in both patients.

Results: During radiologic investigation the contrast material given through the port was detected in free space and leak was seen through the connecting tube. It was discovered that the distal end of the tube was also retracted to the abdominal cavity. This retracted part of tube was identified by using laparoscopy and the integrity of the system was established laparoscopically. It was also retrospectively learned that the connecting tube was cut during the abdominoplasty procedure performed by plastic surgery team.

Conclusion: The connecting tube of gastric band can be damaged during abdominoplasty procedure. This rare complication may interfere with consistent weight loss established after the index operation. However reconstructive surgery teams should be informed by general surgery teams about the location of this connecting tube within the abdominal wall in order to prevent its damage.

P.077 Single Center Experience of the Transumbilical Subfascial Port Implantation in Adjustable Gastric Banding Surgery: A 3-year Series of 83 Cases

PRESENTER: S. Kim¹

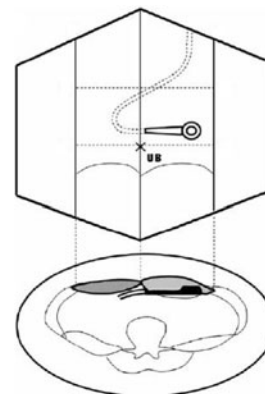
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Introduction: The present study was retrospective review of the outcome of our port implantation techniques in adjustable gastric banding surgery.

Method: We retrospectively reviewed the medical records of the patients who underwent transumbilical subfascial port implantation between January 2010 and March 2013. After the intraabdominal procedure was completed, the left anterior rectus sheath was incised about 2 cm longitudinally. A subfascial space was created by muscle retraction and sponge stick swabbing. The end of the tubing was grasped and pulled into the subfascial space, then the port was connected to the tubing. The port was located under the rectus muscle without fixation suture.

Results: In total, 83 consecutive patients were enrolled into our study. 70 were female patients. The median age was 31 (16–54) years. The median BMI was 33.5 (28.7–50.1) kg/m². In two patients, right subfascial space was used for port implantation due to technical reason. There was not a single case showing port infection during the immediate postop period. The median follow-up was 20.8 (0.4–38.3) months. During the follow-up period, there was not a single case showing skin erosion around the port, port site hernia, port protrusion, port leak, and port-tube disconnection. One patient showed partial port inversion during her second trimester of pregnancy. All patients were satisfied cosmetically due to the absence of large scar at port implantation site.

Conclusion: Our midterm results beyond the first postop year show that subfascial implantation of the laparoscopic adjustable gastric banding port minimizes port-related complications and is cosmetically acceptable.



P.078 Laparoscopic Gastric Banding: A Review of First 25 Patients After 5 Years

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Introduction: There are conflicting results concerning the efficiency of Laparoscopic Adjustable Gastric Banding (LAGB). The aim of this study is to determine the long term results of our first 25 patients after five years.

Method: Between December 2006 and September 2007, 25 consecutive patients underwent to LAGB. All operations were performed with the same surgeon by using pars flaccid a technique. The following data were analyzed: The BMI before operation, Body Mass Index (BMI) loss at 1,2 and 5 years, complications and reinterventions.

Results: Mean age of patients was 35.3 years (range, 22–56). The operative mortality rate was zero. The mean BMI at preoperatively, 1 year, 2 and 5 years was 43.6, 33.6, 31.7 and 36.5 respectively ($p < 0.01$). Five patients (20%) experienced minor complication with related port. Nine (36%) underwent reoperations (two port problems, one pouch dilatation, 6 regaining of weight). Of these 6 patients, 3 were switched to sleeve gastrectomy, one to roux-en-y gastric by pass, one to biliopancreatic diversion and one only band removal. **Conclusions:** As a conclusion, LAGB appeared to be a promising intervention when the results at two years were analyzed. However, these results do not persist in the long term according to our small series data.

P.079 Our Experience in Revisional Bariatric Surgery for Failed Adjustable Gastric Banding

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Introduction: Complications of laparoscopic adjustable gastric bands (LAGB) are well documented and may include migration, erosion, slippage, infection, pouch dilatation and, rarely, gastric perforation. We describe our experience in revisional bariatric surgery in patients with LAGB.

Method: Between March 2008 and February 2013, 48 patients underwent surgery for failed gastric banding. The most common reason for band removal was failure to lose adequate weight. Forty patients were converted to other bariatric procedures. Twenty-two patients underwent sleeve gastrectomy, 5 patients gastric bypass, 1 patient mini gastric bypass, 2 patients rebanding.

Results: The median duration of surgery was 85 minutes.

There was no need for conversion to open surgery. There was no leak postoperatively and no other major postoperative complication.

Conclusion: We found that although LAGB appeared to be beneficial for weight reduction and improving co-morbidities, significant rate of treatment failure might limit the long-term effectiveness of LAGB. Concomitant revisional procedure after removal of gastric band is safe and feasible. The operative morbidity and mortality rate is low.

P.080 Is Gastro-Gastric Suturing Necessary in Laparoscopic Adjustable Gastric Banding?

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Introduction: Laparoscopic adjustable gastric banding is one of the safest and most effective bariatric operations. Usual gastric band application technique implicates gastro-gastric suturing around the band to secure it and prevent slipping.

Materials and Methods: From 2006 to 2012 we have performed 362 gastric banding. From 2006 to 2010 the operations were performed with band fixation with gastro-gastric suture (270 operations, group A). From 2011 to 2012 the operations were performed without band fixation (92 operations, group B). Groups were compared by gender, age structure, body mass index. The maximum observation period in Group A - 36 months, in group B - 20 months.

Results: The average time of laparoscopic surgery stage in Group A was 28,3±6,1 (15–90) minutes; in group B - 14±5 (9–25) minutes. In the late postoperative period in group A slippage syndrome developed in 16 (4.4%) cases. Of these, 9 patients were operated. The band was removed in 4 patients. In group B slippage syndrome developed in 3 (3.2%) cases. Of these, 2 patients were operated. In 1 patient slippage syndrome was eliminated endoscopically without surgery. Weight loss degree did not significantly differ between the groups. ($P < 0,05$)

Conclusions: The analysis shows that lack of the band fixation leads to a significant reduction in operative time, with no effect on slippage syndrome incidence.

P.081 Laparoscopic Gastric Banding for Obesity, a Single UK Centre Experience

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Introduction: Obesity is a pandemic problem that has multifaceted effects on public health. Surgery for obesity has shifted from primarily being for weight loss to being for metabolic disease such as diabetes. (LAGB) We present the 13-year outcome of LAGB from a single UK centre.

Methods: A prospective bariatric database was used to identify patients that had Laparoscopic adjustable gastric bands LAGBs placed between 1999 and 2012. The demographic details, co-morbidities, weight loss and complications associated with the placement of the gastric bands were identified.

Results: There were 731 LAGB (144 males and 587 females) placed during the period with a median age of 37 (range 17–71) years. This included patients with type 2 diabetes ($n=129$), type 1 ($n=9$), hypertension ($n=251$) and obstructive sleep apnoea ($n=83$). The initial median weight of the patients was 125.7kg with a median BMI of 42.3 (range 24.7-80.0) kg/m². Twenty-two patients (3%) had complications associated with their bands due to slippage. Seventy patients (10%) went on to have further bariatric procedures. The percentage excess weight loss (% EWL) and follow up over 5 years shown in the table. There was no mortality associated with the LAGB surgery in our patient cohort.

% Excess weight loss	Year 1	Year 2	Year 3	Year 4	Year 5
<25	40%	36%	22%	23%	23%
25–49	43%	36%	40%	42%	33%
50–74	13%	20%	27%	24%	28%
>75	4%	8%	11%	11%	16%
% Follow up	97	91	82	75	75

Conclusion: LAGB is a safe option for the management of obesity in patients with metabolic disease as a primary procedure. Patients achieve an acceptable and sustained good weight loss over a 5 year follow-up period.

P.082 Laparoscopic Greater Curvature Plication: As Good as Gold?**PRESENTER: P. Holeczy¹**Co-authors: M. Bužga², M. Bolek³, L. Havrlentová³, J. Krištof³, J. Ševčíková³¹Medical Faculty, University of Ostrava, Surgical, Ostrava-Czech Republic²Medical faculty, University of Ostrava, Physiology and Patophysiology, Ostrava-Czech Republic³Vitkovice Hospital, Surgical, Ostrava-Czech Republic

Introduction: Laparoscopic greater curvature plication (LGCP) is an emerging procedure. Its potential advantages are simplicity, good weight loss, low complication rate and reversibility.

Methods: In the time from 1.1.2011 to 15.2.2013 together 100 procedures were performed. The antropometric parameters, weight loss and complication rate was measured prospectively. Until September 2012 two rows of continuous stitches for inversion of the greater curvature were used, afterwards only one row plication was performed. Indication for the procedure was done according standard IFSO criteria. Expected good patients compliance according psychologic examination was needed.

Results: In the group there were 21 men and 79 women, average age was 44,83 years, average weight 118 kg and BMI: 41.3. The excess weight loss (EWL) in the whole group was 39,06 % (mean follow up time 7 month). In the subgroup of patients with follow up minimally one year the EWL was 51,94%. Total complication rate was 13 %. Perforations of gastric wall was observed in 4 cases. The urgent reoperation was necessary. In 9 cases the plication release was found. From these in 6 cases the re-plication was done. Total reoperations rate was 10 % so far. Zero mortality was observed.

Conclusion: Laparoscopic greater curvature plication was presented as a simple, safe procedure, with low complication rate and good EWL. The authors results has proved that LGCP has good results in short time in weight loss, but there is higher complication and reoperation rate. The introduction of LGCP into surgical practice should be very careful.

P.083 Retrospective Analysis of Three Different Techniques in Laparoscopic Gastric Greater Curvature Plication**PRESENTER: R. Kutanis¹**Co-authors: M. Tokocin¹, H. Bilge¹, S. Arici¹, O. Karagulle¹, F. Celebi¹¹Bagcilar Training and Research Hospital, Surgery, Istanbul-Turkey

Introduction: Gastric plications can be done to the front side of the stomach or to the greater curvature. The main reason we preferred gastric greater curvature plication (ggcp) is to limit the volume of stomach as much as possible with its own wall curves. Our aim was to find the most suitable technique by using and comparing the results of 3 different techniques that we had used in the operations.

Methods: From November 2010 we managed n=296 operations. In the first n=113 patients we applied 2 row plications (n=95;0 silk suture, n=5;0 polypropylene). The patients experienced intensive dyspeptic symptoms and we observed complications in the endoscopic evaluation such as gastric webs, ulcerations and invagination of the plicated stomach (conclusion of disrupted/broken stitches). Following n=20 patients we applied continuous suture with 3 row plications (0 polypropylene). We observed a decrease in the gastric symptoms. We developed this technique by applying continuous suture with 4 row plications (0 polypropylene). We observed significant decrease in the dyspeptic symptoms and complications such as gastric webs or disruption of the fold.

Results: In the article we compared 3 different methods with the details of the techniques and the mortalities through the follow-ups and we wanted to attain the most suitable technique.

P.084 Mini Gastric Bypass in the Treatment of Prader Willi Syndrome. A Case Report with Two Years of Follow Up**PRESENTER: M. Musella¹**Co-authors: M. Milone¹, M. Leongito¹, P. Maietta¹, P. Bianco¹, A. Pisapia¹, C. Taffuri¹, D. Gaudioso¹¹"Federico II" University, Advanced Biomedical Sciences Dept. – General Surgery, Naples-Italy

Introduction: Prader-Willi syndrome (PWS) is a genetic disorder mainly characterized by hyperphagia and early-childhood onset obesity. Because of behavioral and cognitive problems causing the failure of any dietary control program, bariatric surgery appears to be the appropriate therapy in these patients. In this study we present our experience of treating PWS-associated obesity with laparoscopic mini-gastric bypass (LMGBP). This is the second published case of PWS treated by LMGB so far.

Patient and Method: A 16 y.o. boy with PWS, BMI of 54,8 Kg/m², hypertension and frequent severe sleep apnea crisis, was referred to our department. The patient underwent a LMGB at about 190 cm from the Treitz ligament. Main preoperative parameters as BMI, ghrelin levels, CPK, Hb A_{1c}, arterial pressure and EGA were respectively: 54,8 Kg/m²; 1163,7 pg/ml; 148 u/L; 5,9%; 150/100 mm/Hg; 95% sat O₂.

Results: The postoperative period was uneventful and the young patient was discharged five days following surgery. Two years later main parameters are: BMI 40.6 with an EWL of 44 %; fasting plasma acyl ghrelin 353,1 pg/ml; CPK 65 u/L; Hb A_{1c} 5,1 %; arterial pressure 130/75 mmHg without therapy and 99% sat O₂. The resolution of sleep apnea disorder has been recorded as well. An oral multivitamin and iron implementation is daily administered in order to treat iron deficiency anemia.

Conclusion: Although larger series and longer follow up are needed, according to these data, LMGBP seems to be a valid approach for the treatment of PWS-associated obesity.

P.085 Immediate Results of Laparoscopic Gastric Bypass Surgery**PRESENTER: V. Egiev¹**Co-authors: E. Zorin¹, J. Mayorova¹, I. Karev¹, A. Meleshko¹¹Treatment and Rehabilitation Center Ministry of Health and Social Development the Russian Federation, Department of Surgery and Oncology, Moscow-Russia

Introduction: Gastric bypass surgery is a "gold standard" in bariatric surgery.

Materials and Methods: 139 operations performed from 2005 to 2012. Of these, 112 (80.5%) were laparoscopic (study group), and 27 (19.5%) were open (control group), male/female ratio 1:4 and 1:1.7, mean age 37,8±9,8 and 46,4±9,4 years (p>0.05), BMI was 45,3±6,3 kg/m² and 50,5±8,6 kg/m², respectively (p>0.05). 77.7% of study group patients and 88,8% of control group had co-morbidities. Three cases (2.7%) in study group required conversion to laparotomy due to severe visceral obesity and technical difficulties in gastrojejunostomy. 5 simultaneous operations performed - 4 cholecystectomies and 1 phlebectomy, their frequency in control group was 40.7% (11 patients). 7 cases required herniotomy for postoperative hernia, 2 - for umbilical hernia and one - inguinal herniotomy and cholecystectomy.

Results: Operation time was 178,5±32,8 min in the study group and 122,4 ±23,9 in control (<0,05). No lethal cases. Study group had 10 cases of early complications (8.9%): intra-abdominal bleeding (2); subhepatic abscess (1); torsion of the abductor intestinal loop (1); omentum and intestine strangulation in the trocar-site (2); anastomotic stenosis (2). Control group: 3 complicated cases (11.1%) - obstructive bronchitis, festering wound, anastomotic ulcer. Mean hospital stay was 5,6±1,4 days in main group and 10,4±2,1 in control (p<0.05). Study group patients required less potent painkillers and had shorter rehabilitation period.

Conclusions: Reported data suggest that laparoscopic gastric bypass doesn't increase the incidence of complications (8.9% vs. 11.1%), and significantly reduces the hospital length-of-stay and rehabilitation period.

P.086 Barbed Suture and Endo-Lineal Stapler for Closure of the Gastrojejunal Anastomosis in Laparoscopic Gastric By-pass

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Introduction: Laparoscopic Roux-en-Y gastric bypass is the bariatric most used surgical procedure for morbid obesity treatment. The procedure is best standardized but there are different ways to perform the gastrojejunal anastomosis. The aim of this study is to establish the safety and efficacy of this type of anastomosis. **Methods:** A retrospective study of 60 consecutive patients between May 2011 and January 2013 was performed. The surgical techniques was standardized and a retrogastric antecolic gastrojejunal anastomosis was performed with a 12 mm endo-lineal stapler and a continuous barbed suture in the anterior anastomosis side. Oral intake was progressively increased after a metilene-blue test control. The following data were recorded: age, sex, body mass index, American Society of Anaesthesiology Score, operative time, length of hospital stay and complications (mainly gastric fistula or anastomotic stenosis). All the patients were monitored at postoperative months 1 and 3. The aim of this study is to establish the safety and efficacy of this type of anastomosis.

Results: There was no mortality or conversion to laparotomy. There was only 1 fistula. No strictures were observed in any of 60 patients. The length of hospital stay was 4.7 days. No significant postoperative bleeding was observed.

Conclusions: The used of barbed suture and endlineal stapler for closure the gastrojejunal anastomosis in laparoscopic gastric by-pass is safe in terms of leaks and stenosis. This technique could be included in the standard LRYGB.

P.087 Revision of Nissen Fundoplication to Roux-En-Y Gastric Bypass with the Robotic System Da Vinci

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Introduction: Gastroesophageal reflux disease (GERD) is highly prevalent among morbidly obese patients. Most of the morbidly obese patients presenting for laparoscopic Roux en-Y gastric bypass (RYGB) have symptoms of chronic GERD. In these patients, antireflux procedures such as Laparoscopic Nissen Fundoplication (LNF) are reported to have a higher failure rate. Laparoscopic Roux en Y gastric by-pass is becoming the treatment of choice for GERD in the morbidly obese population.

Methods: We describe a case of a 63-year-old patient with a previous LNF and significant weight gain. The patient presented with BMI 42kg/m² and recurrent GERD. We decided to reverse the fundoplication and perform a RYGB using the robotic Da Vinci system.

Results: 2 years after surgery, a significant weight loss was achieved with excess weight loss 77% and a BMI of 33kg/m². Parallel to that, complete remission of sleep apnea, back pain and arthritis of the right hip have been noted together with amelioration of hypertension. GERD symptoms have been eliminated.

Conclusions: The conversion of a Nissen fundoplication to RYGB is always a challenge to the surgeon. RYGB though, appears to be the best alternative for the morbidly obese patient with GERD and previous antireflux surgery. The surgeon has to choose between keeping the wrap or revise it. With the robotic system, the revision of the upper gastric area is much facilitated. Thus, a standard RYGB can be performed without any residuals from the previous operation. No morbidity has been noted.

P.088 A Rare Case of Hypothalamic Obesity Treated with Long Limb Gastric By Pass in a Patient Who Was Priorly Operated for Craniopharyngioma

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Introduction: Obesity deriving from hypothalamic disorders is a serious condition that lacks any documented therapeutic protocol. Only a few cases have been presented in the global literature.

Method: We, hereby present our experience with a 29 years old female patient with hypothalamic type morbid obesity, who was priorly operated at the age of 8 years for a craniopharyngioma. The patient presented with Body Mass Index (BMI) 38kg/m², with obstructive sleep apnea and musculoskeletal problems.

Results: The patient underwent long limb gastric by-pass. 3 years after surgery, she keeps an Excess Weight Loss (EWL) of 75%, and her BMI has significantly diminished to 27.5 (Height 1,65m, Weight 75kgr). Parallel to that, sleep apnea, back pain and arthritis have been cured.

Conclusions: Patients with hypothalamic type obesity may be treated with a long limb gastric by-pass but physicians of multiple specialties, such as surgeons, endocrinologists and neurologists, must cooperate in order to achieve the best expected results in such patients.

P.089 Incidence of Symptomatic Ulceration Post Laparoscopic Roux-en-Y Gastric Bypass (LRYGB)

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Background: Studies demonstrate no difference in complication rates between sutured and stapled anastomoses. Previous studies have also shown post-operative anastomotic ulceration rates of 1-16%¹ which may be associated with *Helicobacter pylori* (HP) infection. Evidence suggests conservative management for post-operative anastomotic ulceration is effective². We report the incidence of anastomotic ulceration after 357 consecutive LRYGB performed at our institution.

Methods: This is a retrospective study based upon prospectively collected data from 357 patients who underwent a LRYGB between 2007 and 2012. All procedures were carried out by two consultant surgeons; one used staples to close the gastro-enterostomy for the gastro-jejunal anastomosis while the other used sutures. The incidence of ulceration, the number of endoscopies required, the incidence of HP detection and the prevalence of smoking in the group were all recorded.

Results: Ten patients presented with anastomotic ulceration (2.8%). In the stapled group (n=154) seven (4.5%) patients represented with symptomatic anastomotic ulceration within the study period. In the sutured group (n=203) three patients (1.5%) represented with symptomatic ulceration. No statistical significance was found between the groups (p=0.08). All patients were treated conservatively and healing confirmed by repeat gastroscopy. *Helicobacter pylori* was tested for in 3 out of the 10 patients. This was negative. Two of the 10 patients were smokers, both of whom were in the stapled group (p>0.1)

Conclusion: A trend of increased incidence of anastomotic ulceration was observed in stapled closure of the gastrojejunal enterostomy when compared to sutured closure. Conservative management of gastric ulceration post LRYGB is a valid treatment.

P.090 The Redo Experience of Two Bariatric Surgery Center

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Introduction: Although Redo surgery in bariatric surgery is becoming as an important issue it has high complication rates, and there is no consensus on the standardized surgical approach to redo surgery. We aimed to review the redo surgery procedures performed in two institute.

Method: A retrospective review of a prospectively maintained database was performed in two institute. Seventeen of four hundred and sixty-eight (Prior Laparoscopic Sleeve gastrectomy (LSG) or gastric bypass (GB) predominantly) were reoperated due to mechanical complications or inadequate weight loss. Data including age, gender, indication of redo surgery, preoperative body mass index (BMI), percentage of excess BMI and postoperative complications were reviewed for all patients undergoing a redo surgery.

Results: Mean age was 35±3 years, and 12 were female. In thirteen patients with previous laparoscopic adjustable gastric banding (LAGB), there were mechanical side effects (10 cases), inadequate weight loss (two cases) and one patient with priory success but taken off the LABG himself. In one patient with previous intragastric balloon, mechanical complications was the indication of redo surgery. Inadequate weight loss was the surgery indication for one patient with previous LSG and one patient with previous laparoscopic gastric plication.

Open or laparoscopic GB was performed 13 of 16 patients; LSG was performed to 3 patients and revision of open non diverted gastric bypass to open diverted gastric bypass, cholecistectomy and ERCP for one patient with gastrocolic fistula. At the mean 16 months follow up, the mean BMI and percentage of excess BMI were 32.4kg/m² and 45.3 %, respectively. There were three wound infection.

Conclusion: Our study suggests that redo bariatric surgery can be performed with satisfactory shortterm weight loss and low complication rates.

P.091 Intussusception: Acute Abdominal After Roux-en-Y Gastric Bypass

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Background: Retrograde (reverse) intussusception of the jejunum is thought to be a very rare occurrence. In a series of 2.000 patients undergone RYGB surgery, 2 patients present abdominal acute obstruction for intussusceptions of the jejunum.

Methods: We describe the clinical and radiologic presentation of a case of jejunojejunal intussusception in 2 patients after Roux-en-Y gastric bypass.

Results: A 39-year-old female presented 1 year after opening Roux-en-Y gastric bypass with colicky abdominal pain, vomiting and inability to pass flatus. She had lost 100% of her excess weight after surgery and her body mass index had dropped from 40 to 25 kg/m². The computer tomography showed target signal in sausage. At exploration, a retrograde intussusception of the small bowel was noted distally to the jejunojejunostomy causing obstruction of the alimentary and biliopancreatic limb and gastric remnant. The intussusception was irreducible with signs of bowel ischaemia and required excision. The second patient 32-year-old female presented 8 months after opening Roux-en-Y gastric present the same symptoms and undergone surgery a intussusception was identify in jejunum limb. The patients made an uneventful recovery. Colicky abdominal pain in a bariatric patient persisting more than 4 h mandates urgent investigation with abdominal computed tomography.

Conclusion: Retrograde intussusception of the jejunum after gastric bypass is probably more common than previously believed. Although resection and revision of the area of intussusception appears to be effective,

more information is needed about the treatment and possible prevention of this disorder.

P.092 ACS NSQIP Experience of Super-Super Obese Undergoing Laparoscopic Gastric Bypass

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Introduction: There is limited outcome data for super-super obese patients, those with BMI 60 kg/m², who seek surgical treatment with gastric restrictive procedures.

Methods: We reviewed ACS NSQIP data for a single institution's experience with laparoscopic gastric bypass in patients with a BMI 60 or greater from February 20, 2002 through November 23, 2012 which represents 13% (146/1125) of laparoscopic gastric bypass procedures performed at this institution.

Results: Table

	BMI 60	BMI 70	BMI 80
Volume	105	32	9
Age	42	37	39
LOS	3	2.4	3.1*
Gender/ female	78% (82/105)	69% (22/32)	67% (6/9)
Race/ white	70% (74/105)	66% (21/32)	56% (5/9)
Preoperative Weight/pounds	388	448	518
Preoperative BMI	64	73	82
Preoperative Comorbidities	204	69	17
Dyspnea on exertion	68% (71/105)	75% (24/32)	67% (6/9)
Hypertension	64%(67/105)	72% (23/32)	56% (5/9)
Diabetes	36% (38/105)	44% (14/32)	33% (3/9)
Operation time (minutes)	190	190	180
Complication events	21	4	11
Patients with complications	11	3	2
Reoperation within 30 days	7% (7/105)	6% (2/32)	33% (3/9)
Readmission	1% (1/105)	0	0
6 month BMI	48	54	58
1 year BMI	43	45	54
2 year BMI	40	41	50
3 year BMI	41	40	35
4 year BMI	41	40	36
Mortality	2% (2/105)	0	11% (1/9)

*removed one outlier with 108 day hospitalization

Conclusion: Laparoscopic gastric bypass procedures provide durable weight loss although with increased risks of mortality for patients with BMI 60 or greater with multiple comorbidities.

P.093 Revision Laparoscopic Roux-en-Y Gastric Bypass After Open Nissen Fundoplication

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Background: We present a case of a morbidly obese patient with previous open Nissen fundoplication who was successfully treated by revision to a laparoscopic Roux-en-Y gastric bypass (RYGB).

Methods: The morbidly obese patients with body mass index (BMI) of 42 kg/m (2) underwent laparoscopic revision of laparoscopic Nissen fundoplication to RYGB by our group. Important steps of the revision include lysis of all adhesions between the liver and the stomach, dissection of the diaphragmatic crura and gastroesophageal fat pad, reduction and repair of hiatal hernia and complete take-down of the wrap to avoid stapling over the fundoplication which can create an obstructed, septated pouch.

Results: The operative time was 3 hours and length of stay was 72 hours. There were no anastomotic leaks. At a mean follow-up of 4 months, body mass index (BMI) loss was 33 and comorbid conditions were improved. Gastroesophageal reflux disease evaluation with the Gastroesophageal reflux disease health-related quality of life (GERD-HRQL) scale showed a significant reduction of Gastroesophageal reflux disease scores postoperatively.

Conclusions: Although laparoscopic RYGB after antireflux surgery is technically difficult and carries higher morbidity, it is feasible and effective in the treatment of recurrent Gastroesophageal reflux disease in morbidly obese patients.

P.094 Longitudinal Versus Transverse Gastrojejunostomy During RYGB for Morbid Obesity: Impact on Marginal Ulcer Rate and Excess Weight Loss

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Introduction: We have previously shown that transverse enterotomy closure significantly reduces gastrojejunostomy (GJ) stricture rates after laparoscopic Roux-en-Y gastric bypass (RYGB) for morbid obesity compared to longitudinal closures. The objective of this study was to compare marginal ulcer (MU) rates and percent excess weight loss (%EWL) between the two closure techniques.

Methods: Retrospective review of consecutive RYGB patients between 2009–11. MU rates based on endoscopy findings and %EWL were recorded. Multivariable logistic and linear regression was used to compare MU rates and %EWL in the different GJ closure techniques respectively.

Results: Of the 197 total patients, 97 (49.2%) had longitudinal closures and 100 (50.8%) had transverse closures. Mean age and BMI of the study population were 44.4 (SD 10.0) and 48.1 (SD 7.1) respectively. There were no statistical differences between baseline characteristics. MUs occurred in 23 (11.6%) patients, 7 (7.2%) in the longitudinal and 16 (16.0%) in the transverse groups, OR 2.45 (0.89, 7.37; P=0.055). Controlling for obstructive sleep apnea and hyperlipidemia in our multivariate model, MU rate was significantly higher in the transverse closure group, OR 2.63 (1.02, 6.79; P=0.046). The mean %EWL was 69.1% in the transverse and 71.3% in the longitudinal groups (P=0.67). There remained no statistical difference in %EWL after adjusting for baseline characteristics.

Conclusions: In exchange for a lower postoperative GJ stricture rate, there is a significant increase in MUs after transverse GJ closure post-RYGB, while %EWL appears unaffected. Further research is needed to determine potential causes of this increase in MU rate.

P.095 Outcome Analysis of Single Incision vs Traditional Multiport Sleeve Gastrectomy: A Matched Cohort Study

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Introduction: Single incision laparoscopy continues to gain momentum in laparoscopic surgery, but remains controversial due to technical challenges. In the sleeve gastrectomy (SG), these technical challenges are thought to cause suboptimal outcomes. This study aims to evaluate the feasibility and equivalency of the single incision SG (SISG) when compared to the traditional multiport (MPSG) approach in a matched cohort.

Method: This is a retrospective analysis of prospectively collected data in a consecutive cohort of 113 SG (MPSG=77, SISG=36). The 36 patients who underwent SISG were included as the case group for a matched cohort study. Thirty-six MPSG patients were included in the control group, in 1:1 ratio with cases after matching for BMI, race, age and gender.

Operative time (OT) in minutes and length of stay (LOS) in days was measured and excess weight loss (EWL) at six months and one year was collected for these patients.

Results: Mean BMI for the two groups was equivalent (SISG 42.06, MPSG 43.72, p=0.06). Mean OT for the SISG group was 116.78 and 118.25 for the MPSG group (p= 0.84), and mean LOS was 1.80 for the SISG group and 1.75 for the MPSG group (p=0.75). EWL at six months was 58.4% for the SISG group and 58.5% for the MPSG group (p= 0.98) and 72.3% and 74.1% (p= 0.77) for one year respectively.

Conclusion: Sleeve gastrectomy can be performed safely using single incision techniques with equivalent outcomes for weight loss while offering better cosmesis.

P.096 One-step Conversion of Failed Adjustable Gastric Banding to Sleeve Gastrectomy: A Short-term and Medium-term Effective Option

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Introduction: Gastric banding (GB), a low risk procedure, has a significant incidence of long term failure. When removing the band, a one-step conversion to sleeve gastrectomy (SG) is an option.

Methods: retrospective analysis of our series. 12 patients benefited from a conversion from GB to SG on a 27 months period. We did no two-step procedure during this period.

Results: No patient was lost to follow up. All were female, mean age 49 (34–63), wearing an adjustable band for 10 years on average (5–15). The causes of failure were: band at the oesophagogastric junction (5), esophageal dilation (3), mechanical problem (2), gastric dilation (1), psychological intolerance (1). There was no infection, no intra-gastric migration. The average weight excess (WE) was 47 kg (37 to 63), the average BMI was 39.2 (34 to 44).

The operating time was 117 minutes (55–224), and 107 minutes by excluding the particular case of the patient presenting with a dilation of the proximal stomach which was herniated as a large paraoesophageal hernia. The length of stay was 5.1 days (4–6). There was no immediate post-operative complication. After an average of 12.9 months (1–27) the % of WE loss is 52 %, or – 8.25 points of BMI. For the six patients with more than 12 month follow up, these figures are 68 % and - 10 points. The main medium-term problem was reflux.

Discussion: A one-step procedure is a reliable option. An evaluation on larger and longer-term studies is necessary.

P.097 Hand-assisted Laparoscopic Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is emerging as a popular bariatric procedure. LSG is typically necessitates four to seven trocars and five to nine laparoscopic linear stapling device. We have modified the technique about stapling.

Methods: Twenty-two patients underwent LSG between February 2012 and January 2013. We performed hand assisted LSG in seven of them. In this technique, standard LSG procedure was performed except laparoscopic linear stapling stage. After the mobilization of great curvature, we made approximately 5 cm incision above the umbilicus. We placed 80 mm linear stapling device, which is used in open surgery, into the abdomen. The stapling was performed by using 80 mm linear stapler device. The stapling necessitates four 80 mm linear stapler device.

Results: The procedures were successfully performed in all patients. None of the patients required conversion to an open procedure. LSG and Hand-assisted LSG techniques were not different in postoperative hospital stay and operative time. There were no mortalities or postoperative complications noted during the follow-up period. The cost of LSG is eight times higher than that of Hand-assisted LSG because of expensive laparoscopic stapling devices.

Conclusion: Hand-assisted LSG is not only safe and technically feasible but also has lower cost.

P.098 Sleeve Gastrectomy in Surgical Treatment of Obesity

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Introduction: The prevalence of obesity is increasing worldwide. Single-stage sleeve gastrectomy (SG) may represent an effective surgical option for obesity. The aim of this study was to examine the effectiveness and safety of SG as a primary step for reduction of obesity-related co-morbidity.

Methods: We studied 35 patients (10 males, 25 females), mean age – 42±11.7 years (range 16–68 years), mean body weight – 127.9±37.7 kg (range 85–240 kg), mean excessive body weight – 65.9±31.4 (32–168), mean BMI 44.3±9.5 kg/m² (range 33.5–77.5 kg/m²) who underwent SG (laparoscopic – 17, open – 18) from 2010 to 2012.

Results: Arterial hypertension, dyslipidemia, type 2 diabetes mellitus (T2DM) were diagnosed preoperatively in 20 (57.1%), 19 (54.2%) and 8 (22.9%) patients respectively. Mean risk of morbidity and mortality was calculated from P-POSSUM – 10.2 ±6.7% and 0.5±0.4% respectively, due to influence of cardiovascular and respiratory obesity-related diseases. Mean operative time was 110±19.4 min (range 78–198 min), mean intraoperative blood loss – 102.9±48.4 ml (range 50–200 ml). There were no major perioperative complication, necessity of readmission and mortality in our patients. Median percent excess weight loss – 57.1% and 67.8% at 12 and 18 months after operation respectively. Hypertension, dyslipidemia, T2DM completely resolved in 14 (70%), 13 (68.4%), 5 (62.5%) patients with sufficient reduction of co-morbidities in other cases.

Conclusion: SG is a safe and effective restrictive technique to achieve marked weight loss as well as significant reduction of obesity-related co-morbidities with an acceptable operative time, intraoperative blood loss and perioperative complication rate.

P.099 Laparoscopic Sleeve Gastrectomy with Psd-V Staple Line Reinforcement

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Introduction: Laparoscopic sleeve gastrectomy (LSG) as a primarily restrictive bariatric surgical procedure has been shown to be effective in producing marked weight loss. However, LSG associated gastric leakage and hemorrhages remain the most important challenges postoperatively. PSD-Vstaple line reinforcement has been suggested to reduce these postoperative

complications. Our objective was to assess this reinforcement system in morbidly obese patients undergoing LSG focusing on postoperative complications.

Methods: Between November 2010 and March 2012, we retrospectively reviewed the medical records of 85 consecutive patients that underwent LSG with PSD-V staple line reinforcement at an university hospital with large experience in bariatric surgery. Study endpoints included mean BMI, operative data, conversion to laparotomy, intraoperative complications, bleeding and fistula rates and duration of hospital day.

Results: Mean weight was 130.5 kg (range,05 -171) and mean preoperative BMI was 45.1kg/m(2) (range38-64). The mean operating time was 95 minutes (range50-210). One patient required conversion to laparotomy. The incidence and severity of intraoperative staple line bleeding was not specifically calculated but was visually noted to be minimal in all cases. The 97% of patients had not significant drain fluid and blood transfusion was necessary in one case. Postoperative course was uneventful in 98% patients, not gastric fistula was observed in any case. The median duration of hospital stay was 3.5.

Conclusions: LSG is a safe procedure. PSD-V is easy to load on the stapler, and no operative complications related to the use. Not significant intraoperative or postoperative bleeding was observed with PSD-V collagen matrix and it is safe line reinforcement in terms of prevent bleeding and gastric leakage.

P.100 Outcomes of Sleeve Gastrectomy and Predictors of Success

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Introduction: Laparoscopic sleeve gastrectomy (SG) is currently emerging as a bariatric surgery technique. We report our experience with SG and identify possible predictive factors of weight loss.

Methods: Observational retrospective study of 250 SG. All SG performed in our institution were included despite of having been done as primary surgery or redo surgery in the context of failure or complication of a previous bariatric surgery. Weight loss data was collected only in patients who underwent SG as primary surgery. Multifactorial analysis was conducted.

Results: Mean operative time was 119 minutes, with conversion to open SG being necessary in 2,0% of the patients. The 30-day overall morbidity was 15,6%, mostly minor complications (10,8%). There were two deaths (0,8%) related to the surgery. The readmission rate was 9,3% and the reintervention rate was 5,6%. There were leaks in 2,8% of patients. Mean percentage excess weight loss was 79,9% at one-year after surgery and 80,5% at two-years. Factors that related to weight loss were: body mass index (BMI) pre-surgery, young age (less than 40 years) and absence of comorbidities. In the multifactorial analysis, BMI pre-surgery and age where the factors that most influenced the amount of lost weight.

Conclusion: Despite laparoscopic SG surgery being one of the most recent bariatric procedures, the results of this study support its use in the surgical management of morbid obesity.

P.101 Quality of Life After Sleeve Gastrectomy: What can Be Improved?

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Introduction: Quality of life (QoL) improvement is one of the most important aspects of bariatric surgery alongside with weight loss and comorbidity

resolution. The present study aims to evaluate the improvement of quality of life (QoL) in obese patients submitted to sleeve gastrectomy (SG).

Methods: Cross-sectional study of 57 obese patients in a waiting-list for bariatric surgery and 105 patients who underwent SG in a Portuguese surgical center. For QoL assessment, the Moorehead-Ardelt Questionnaire II (M-A-QoLQII) was used.

Results: There was no difference between groups in respect to sex, age, prevalence of comorbidities and body-mass index (BMI) before the surgery. BMI was significantly different between the pre and post-surgery groups ($42,7 \pm 8,3 \text{ Kg/m}^2$ vs $31,6 \pm 5,5 \text{ Kg/m}^2$, $p < 0,001$).

The M-A-QoLQII showed differences in patients' QoL (0,13 vs 1,72, $p < 0,001$) between the pre and post-surgery groups with statistical significance ($p < 0,05$) in all domains. The average results of QoL were lower in the group of patients over one-year after surgery when compared to patients in the first year, despite not being statistically significant (1,87 vs 1,62, $p = 0,24$). The results of M-A-QoLQII didn't correlate with the loss of excess of BMI.

Conclusion: Patients submitted to SG surgery show better results of QoL than patients in the waiting list with the M-A-QoLQII.

However, it appears that results may be better in patients within their first year after surgery but this needs to be confirmed with a prospective trial.

P.102 Laparoscopic Gastric Mini Bypass vs. Laparoscopic Sleeve Gastrectomy for Treatment of Morbid Obesity. Preliminary Results of a Prospective Randomized Study

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Introduction: Gastric mini by pass and sleeve gastrectomy are two of the most common operations for morbid obesity.

Patients and Methods: Patients who fulfilled the criteria for surgical treatment of their morbid obesity were randomized for undergoing laparoscopic mini by pass or sleeve gastrectomy. Demographic data and data from the operation, the perioperative clinical course and data from a three months time period of follow up were prospectively collected and statistically analyzed.

Results: A total 142 patients were randomized and prospectively collected in 21 months. The 33,8% of the patients were male and the 66,2% were female. The 116 patients were undergone laparoscopic sleeve gastrectomy and the 26 were treated with a laparoscopic mini bypass. The mean BMI and the hospital stay for the two groups were not statistically different. Statistical significant differences were observed in the duration of the operation (sleeve vs mini bypass: 44,82 min vs 60,21, $p < 0,001$), the number of trocars which were placed (sleeve vs mini bypass: 4 vs 5) and the number of intraoperative complications (sleeve vs mini bypass: 22,7% vs 0,7%, $p < 0,009$). Postoperative complications were not statistical different in the two procedures.

Discussion: Gastric mini by pass and sleeve gastrectomy are two operations safe and efficacious for morbid obesity. Nevertheless, laparoscopic sleeve gastrectomy is a less time consuming operation but has more intraoperative complications than the laparoscopic mini bypass. The postoperative complications during three months postoperative follow up are similar for the two procedures.

P.103 Gastric Leaks After Laparoscopic Sleeve Gastrectomy: Endoscopic Treatment Approach

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is one of the most effective surgical treatments for morbid obesity. Gastric leak (GL) is the main complication and is associated with higher morbidity when re-operated.

Method: From April 2007 to January 2013, 415 morbidly obese patients underwent LSG. Thirteen of the 415 patients (3%) developed post-operative GL. Their treatment is challenging. In this retrospective study, we intend to show the improvement of therapeutic outcomes, based on the endoscopic approach, which has been the common practice in our department since August 2010.

Results: The gastric leak orifice was located within the upper third of the staple line near the esophago-gastric junction in all thirteen patients and its diameter ranged between 3 and 8mm. The time between surgery and endoscopic detection rounded 28 days (4–146). The average number of endoscopic procedures for patient was 4. In 8 patients, the first therapeutic attempt was done with clips, with a successful result in 3 cases. In 3 patients, metallic stent were introduced; 1 of these achieved closure of the leak. In 2 cases was inserted a plastic stent.

Three cases with recurrence of gastric leak were successfully treated by endoscopic procedures (stent and naso-enteric tube). Primary closure with endoscopic techniques was not possible in 3 patients. Only 1 patient was re-operated maintaining gastric leak postoperatively. Definitive closure of all leaks took an average of 111 days (27–300).

Conclusion: Endoscopic treatment of gastric leaks after LSG should be considered the first therapeutic option, as it appears to be an effective and safe procedure.

P.104 The Stapled Line in Sleeve Gastrectomy

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Introduction: Postoperative leak and bleeding from the staple line are the main complications in the early postoperative course after laparoscopic sleeve gastrectomy.

Aim: This study aims to assess the effectiveness of oversewing of the staple line following the laparoscopic sleeve gastrectomy in our group of patients.

Material and Methods: This trial included patients after laparoscopic sleeve gastrectomy. Two different principles of oversewing of the staple line (selective vs. mandatory) were analyzed. The design of this trial was retrospective-prospective. Postoperative complications were recorded.

Results: From September 2006 to December 2011, 638 laparoscopic sleeve gastrectomies were carried out by using the standard laparoscopic technique. 297 of these patients belonged to the group with selective oversewing of the staple line. 341 consecutive patients belonged to the group with the oversewing of the staple line in all the cases. Both the groups were comparable in basic parameters.

Postoperative leak affected one patient in both of the groups, 0.30 percent versus 0.29 percent ($p = 0.9203$), respectively. The rates of postoperative bleeding were 2.7 per cent (selective oversewing) versus 0 per cent (mandatory oversewing) ($p = 0.0023$), respectively.

Conclusion: In our study no significant differences were observed regarding postoperative leak after oversewing of the staple line. The rates of postoperative bleeding were significantly lower in the group with the mandatory oversewing of the staples line.

P.105 Our Experience in Sleeve Gastrectomy: 153 Patients**PRESENTER: O. Banlı¹**Co-authors: H. Altun², R. Karakoyun², A. Karip², H. Celik²¹Ankara Cag Hospital, General Surgery, Istanbul-Turkey²Fatih Sultan Mehmet Hospital, General Surgery, Istanbul-Turkey

Introduction: Laparoscopic sleeve gastrectomy (LSG) is a single stage bariatric procedure nowadays. It is gaining more popularity. We report our 4 years experience in two centers with LSG regarding to complications and follow-up results.

Methods: Between February 2009 and March 2013, 153 patients underwent LSG in two centers. There were 114 women and 39 men. Mean age was 37 years (min 19, max 64 years). Mean preoperative body mass index was 46.1 kg/m². All patients underwent LSG.

Results: Mean hospital stay was 3.6 days. Overall major complication rate was 3.2%. There were 3 complications (3 leaks, 2 bleedings). Operation was converted to open surgery in one patient. There was one mortality (0.6%). Excess weight losses at 1 month, 6 months and 1 year were 18.4%, 32.8% and 66.6%, respectively.

Conclusion: LSG as a single-stage bariatric procedure is safe and durable. Weight loss is comparable to other bariatric procedures in terms of complication and early weight loss. Its complication rate is low. This procedure can be accomplished with low complication rate and high success rate.

P.106 Clinical Experience in 130 Morbid Obesity Surgery from a Single Institution**PRESENTER: A. Karip¹**Co-authors: H. Altun¹, S. Tezer¹, M. Okuducu¹, E. Onur¹, O. Bat¹, M. Fersahoglu¹, K. Memisoglu¹¹Fatih Sultan Mehmet Education and Research Hospital, General Surgery, Istanbul-Turkey

Introduction: Morbid obesity traditionally defined as a BMI of 40 or more, or a BMI of 35 or more in the presence of comorbidities. In Turkey morbid obesity is not epidemic but its prevalence is getting higher day by day. In this study we published our single clinic experience in morbid obesity surgery.

Method: We have prospectively collected of 130 patients data since March 2009 to December 2012.

Patients age, gender, preoperative BMI, type of operation, post-operative complications, excess weight loss (EWL) at the first, 3rd, 6th and 12th months were collected. Data were analyzed. There were total 130 patients, 97 female and 33 male. One-hundred and forty-five operations were performed during this period. Operations were, 16 gastric banding (GB), 11 band removal, 103 sleeve gastrectomy(SG), 4 gastric by-pass(GBP), 9 mini-gastric by-pass(MGBP) and 1 SILS gastric banding. Mean age was 36.23 years (min 19-max 64) and mean hospital stay was 3.02 days (min 1-max 13 days).

Results: Preoperative mean weight was 126.7 (min 85-max 210) kg, and mean BMI was 45.8 kg/m² (min 29.7-max 64.1). At 1st postoperative month, mean BMI was reduced to 42.1. EWL of the procedure's were, %18.4 for GB, %18.4 for SG, %18.4 for GBP and %16.3 for MGBP. At 3rd postoperative month mean BMI was 38.7. EWL for GB was %29.3, %33 for SG and %39 for MGBP and %40 for GBP. The EWL calculations were %32, %53, %32 and %54 for GB, SG, MGBP and GBP respectively. We had no GBP or MGBP patient in 12 month follow up group, so our 12th month EWL was %39 for GB and %66 for SG. Our morbidity and mortality ratios were % 15.4 and %0.9, respectively.

Conclusion: We presented our experience of our center in bariatric surgery. Our morbidity and mortality ratios are comparable to the literature. EWL is successful at 1 year after surgery. Bariatric surgery remains a safe and effective intervention for select patients with obesity.

P.107 Laparoscopic Sleeve Gastrectomy - Treatment for Morbid Obesity: 5 Years Analysis**PRESENTER: A. Barão¹**Co-authors: J. Coutinho¹, F. Carepa¹, J. Girão¹, C. Ferreira¹, M. Gomes¹, A. Ruivo¹, H. Bicha Castelo¹¹Hospital Santa Maria, Servico de Clínica Cirúrgica João Cid dos Santos, Lisboa-Portugal

Introduction: This study analyzes the results of Laparoscopic Sleeve Gastrectomy (LSG) as treatment for patients with morbid obesity.

Method: It includes 415 patients, evaluated at an outpatient follow-up, during five years after surgery, according to the following protocol: Clinical assessment: percentage of weight loss, decreased body mass index and percentage of excess weight loss; Evolution of co-morbidities; Quantification of ghrelin pre and post-operative, as well as the relation ghrelin / obestatin, PYY and GLP-1; Changes in gastric emptying, determined before and after surgery.

Conclusion: The authors examine also morbidity and mortality in their series, concluding that LSG are no longer a simple restrictive technique, but a procedure that evolves a restrictive approach and also a metabolic one (Hindgut Theory).

P.108 Laparoscopic Gastric Sleeve and Metabolic Syndrome**PRESENTER: A. Barão¹**Co-authors: J. Coutinho¹, F. Carepa¹, J. Girão¹, C. Ferreira¹, M. Gomes¹, A. Ruivo¹, H. Bicha Castelo¹¹Hospital Santa Maria, Servico de Clínica Cirúrgica João Cid dos Santos, Lisboa-Portugal

Introduction: The Metabolic Syndrome (MS) is a complex disease, usually associated with an increased cardiovascular risk, due to central fat distribution and peripheral insulin resistance. Nowadays, there are several treatments for MS, including bariatric surgery, which reduces cardiovascular risk.

Method: This study presents a group of 69 patients with MS, submitted to laparoscopic sleeve gastrectomy, that were evaluated annually after surgery, regarding their body mass index, body weight and all MS criteria for a period of 60 months.

Results: The MS improved with weight loss in all patients, sometimes with full regression.

Conclusion: The authors conclude that laparoscopic sleeve gastrectomy is a valid option for treating MS in obese patients.

P.109 Compare Two Different Methods About Single Incision Sleeve Gastrectomy**PRESENTER: M. Lee¹**¹China Medical University Hospital, Surgical Department, Taichung- Taiwan

Introduction: Single incision laparoscopic sleeve gastrectomy is a safe and reproducible procedure. In laparoscopic sleeve gastrectomy, most complication is leakage. For reduce this complication, the reinforcement suture is suggested after laparoscopic sleeve gastrectomy. But reinforcement suture is difficult to approach under single incision procedure. So many surgeons will add additional port for complete this procedure.

Method: We compare two methods about single incision laparoscopic sleeve gastrectomy, first method is used by hand-made single wound method, second method is used by two penetrate sites via umbilicus. We compare the operative time, complications, post-operative pain score and final reduced BMI and body weight.

Results: In operative time, post-operative pain, and complications, the second method is better than 1st method. There is no significant difference between this two methods.

Conclusion: This two methods for single incisional laparoscopic sleeve gastrectomy or reduce port surgery are feasible, and they can reduce cost. Especially in 2nd method, it is convenient and reduces pain and save operative time.

P.110 Anti-diabetic Efficacy of Obesity Surgery in Germany: A Quality Assurance Nationwide Survey

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Introduction: Obesity surgeries proved to ameliorate the diabetic profile in morbidly obese diabetics.

Method: Data on nationwide bariatric practice between 2005 and 2011 were collected. Post-operatively, patients were followed up at 1, 2 and up to 6 years, focusing on alterations in diabetic profile.

Results: Among 17,670 patients, follow up was accomplished in 7,695 patients (43.55%). 2,398 patients (31.16%) were diabetic. Of those, 798 patients (33.28%) were insulin treated (IT) and 1,600 patients (66.72%) were non-insulin treated (NIT). Roux-en-Y Gastric Bypass (RYGB) was the most commonly performed procedure (1061 operations, 44.25%), followed by Sleeve Gastrectomy (SG) (805 operations, 33.57%), Gastric Banding (GB) (397 operations, 16.56%), Biliopancreatic Diversion with Duodenal Switch (BPD/DS) (72 operations, 3%) then Biliopancreatic Diversion (BPD) (30 operations, 1.25%). After surgery, patients showed no change/deterioration/newly diagnosed diabetes (NDN) or remission/improvement (RI) of their diabetic state. RI% at 1 year postoperatively was 86.54%, 82.5%, 67.8%, 95.45% and 84.85% with RYGB, SG, GB, BPD and BPD/DS, respectively. At 2 years, RI% was 86.96%, 79.56%, 67.67%, 100% and 90.91% after RYGB, SG, GB, BPD and BPD/DS, respectively. At 6 years, RI% was 83.24%, 63.49%, 58.9%, 100% and 86.36% after RYGB, SG, GB, BPD and BPD/DS, respectively. Malabsorptive procedures (RYGB, BPD and BPD/DS) showed insignificantly higher RI% at all follow up points. IT patients showed insignificantly higher RI% at all follow up points. Malabsorptive procedures showed ascending anti-diabetic efficacy at 6 years.

Conclusion: RYGB and SG are the most common nationwide obesity procedures. Malabsorptive procedures showed a higher anti diabetic efficacy.

P.111 The Early Clinical Results of Bariatric Surgery of a Low Volume Center in Korea

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Introduction: Morbid obesity is still not an emerging social problem in Korea. Therefore, there are a lot of low volume centers in Korea. We report our early clinical results of bariatric surgery in order to evaluate the safety and efficacy of bariatric surgery at a low volume center.

Method: Eight patients who underwent various types of bariatric surgery between May, 2011 and March, 2013 at the Department of Surgery, Incheon St. Mary's Hospital, The Catholic University of Korea were enrolled into this study. There were 1 male and 7 female patients, the mean age was 34±9.5 yrs, the mean body weight was 112.3±19.6 kg and, the mean BMI was 43.6±7.2 kg/m². Two patients had type 2 diabetes (T2DM) and 2 patients had sleep apnea. The types of surgical procedure were 2 cases of laparoscopic adjustable gastric banding (LAGB), 3 cases of laparoscopic sleeve gastrectomy (LSG) and, 3 cases of laparoscopic Roux-en-Y gastric bypass (LRYGBP). Among 3 LRYGBP cases, resection of the gastric remnant was added according to the patient's preference in 2 cases.

Results: The mean operation time was 159±45 min (LAGB, 168 min; LSG, 123 min; LRYGBP, 190 min), the mean blood loss was 36±38 mL and, the mean hospital stay was 5±1 day. There was no postoperative morbidity nor mortality.

Blood sugar level in the 2 patients with T2DM returned to normal without medication at the time of discharge. During the mean 10±8 months of follow up, the mean percentage of excess weight loss at postoperative 1st, 3rd, 6th and, 9th month were 24.5±11%, 36.8±9%, 51.8±4.5% and, 59.6±6%.

Conclusion: Bariatric surgery could safely be done even at a low volume center in Korea. The early postoperative weight loss was acceptable.

P.112 One Year Activity of a High Volume Bariatric and Metabolic Centre: Towards a Tailored Surgery

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Introduction: Bariatric procedures have been performed worldwide for more than 50 years. An ideal procedure which could fit for all patients does not exist yet. Aim of this study was to audit the outcomes of a high volume centre which provides a multidisciplinary team approach and a broad range of operations based on the single patient's needs.

Methods: Data were collected from a prospective database from June 2011 to June 2012 comparing the results with clinical notes and electronic discharge summaries.

Results: The overall number of bariatric procedure was 362. The median age of patients was 45 years, with 4:1 female to male ratio. The average body mass index for female and male patients was 48.6 and 50.2 kg/m², respectively. Comorbidities at the time of surgery included hypertension (39.6%), type 2 diabetes (28.9%) and obstructive sleep apnoea (15.2 %). The most common procedures performed were gastric bypass (RYGB 41%), gastric banding (AGB 38%), sleeve gastrectomy (SG 5.5%). A laparoscopic approach was achieved in 98% of cases. Median postoperative stay was 3 days for RYGB and SG, and 1 day for AGB. The overall complication rate was 10.2%, with post-operative strictures making up 35%, and wound infections 14% of all complications. There was no mortality in the series.

Conclusion: Bariatric surgery can be undertaken with low complication rates, short hospital stay and no mortality in high volume bariatric centres where a dedicated pathway and multidisciplinary team are in place. Those prerogatives are essential for achieving a tailored approach to surgery.

P.113 Use of Open-source Software Solution for Electronic Capture of Data in Perioperative Care of Patients Undergoing Bariatric Surgery Procedures

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Introduction: A multidisciplinary approach is necessary for perioperative care of patients undergoing bariatric surgery procedures. Medical data collected during assessment is therefore often scattered around different information systems and departments and is sometimes stored only on paper based medical records. An effective information system is needed for successful quality control, patients followup, data collection for research protocols and collaboration/communication between different team members.

Method: Research electronic data capture (REDCap) is a novel workflow methodology and open-source software solution based on LAMP architecture, designed for rapid development and deployment of electronic data

capture tools to support clinical research. REDCap is available for free for all REDCap consortium partners. Our team has tried to implement REDCap system in our clinical settings for perioperative data collection about bariatric patients.

Results: We have experienced a high rate of stability and reliability in everyday practice during our use of REDCap system. Excellent usability of REDCap for end-users resulted in a very short learning period for new users. Automated live data analysis enabled monitoring of process of care measures. Centralized data storage creates an extended electronic health record that is accessible on different points of care. Data model was easily extendable and modifiable with efficient and easy to use online designer.

Conclusion: Multidisciplinary clinical and research teams can greatly improve clinical data management of bariatric patients with using open source research and collaboration tools like REDCap.

P.114 Significant Reduction in Ten Year Cardiovascular Risk Following Bariatric Surgery

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Introduction: The prevalence of obesity and metabolic syndrome is rising in the UK. Bariatric surgery is the only evidence-based method of long-term weight control in obese individuals. The reduction in individual cardiovascular risk following bariatric surgery has not yet been quantified. QRISK2 is a UK designed, validated and widely used algorithm to predict cardiovascular risk over a ten year period. In this study we calculated the QRISK2 scores for patients pre-and post-bariatric surgery at our institute in an effort to objectively assess cardiovascular risk reduction following bariatric surgery.

Method: The QRISK2 score was calculated pre- and post-operatively for all bariatric patients. Post-operative score was calculated at the point of longest available follow up duration.

Results: A preliminary data set of 104 patients was analysed. Mean follow-up post-operatively was 33 months (median 24 months, range 1–108 months). The majority (n=62; 59.6%) of patients underwent a Sleeve Gastrectomy, 22 (21.2%) patients had Biliary-Pancreatic Diversion (BPD), 12 (11.5%) patients had a Roux-en-y Gastric Bypass, and 8(7.7%) were fitted with Gastric Bands. Median pre-operative 10-year QRISK2 score was 5.8% (mean 9.4%, range 0.3% - 45%). Median post-operative 10-year QRISK2 score in these patients was lower at 4.8% (mean 7.2%, range 0.2% - 36.1%); p<0.001.

Conclusion: This study demonstrates a significant reduction in cardiovascular risk following bariatric surgery.

P.115 3-Years Follow-up Data from app. 300 Conservatively and Operatively Treated Patients in Giessen, Germany

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Introduction: The treatment of morbidly obese patients has a long tradition in the university hospital of Giessen, Germany. However, conservative treatment has a longer history than bariatric surgery and a multimodal conservative therapy is presented to the patients for several years. The bariatric procedures are performed since 2008 in increasing numbers and consist mainly of the gastric sleeve and the fundus resecting Roux-Y-gastric bypass. All operative procedures are mainly performed by two bariatric surgeons. In our poster presentation we want to give an overview on the results of our conservative and operative treatment and underline the necessity of a very direct link between these two treatment arms and the interdisciplinary understanding of the patients.

Method: Between 2009 and today, more than 300 patients were treated in the interdisciplinary University Center for the treatment obesity (UAZM) in Giessen and inserted into an accurate follow up. The longest follow up period is 4 Years, more than 100 patients are seen for more than two years. Development of weight and comorbidities were documented as well as the shift from the conservative to the operative treatment arm.

Results: Both, operative and multimodal conservative treatment lead to a significant weight loss. Definitive data, including two and three Year follow up data will be actualized by July 2013. Patients receiving bariatric surgery after initial multimodal therapy at the UAZM have a better weight loss than those with uncoordinated conservative treatment in the past.

Conclusion: Both, conservative and operative treatment of morbid obesity in Giessen have a significant impact on the patients weight and comorbidities. Centers that treat obese patients must consist of interdisciplinary teams and be able to adapt the therapy to the patients necessities.

P.116 The Effect of Gastric Cancer Surgery on Type 2 Diabetes Mellitus: Short-term Outcome Analysis After Gastrectomy

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Introduction: With increasing proportion of EGC and improved survival, post-operative quality of life becomes more important in gastric cancer surgery. Because diabetes mellitus (DM) is one of the most difficult to address health problems worldwide, the organized evaluation of the impact of conventional gastric cancer surgery on diabetes appears to be necessary.

Methods: Data from 64 patients with EGC and type 2 DM were prospectively collected. All patients underwent curative gastrectomy (36 STG BI, 16 STG BII, 12 TG) and their physical and laboratory data were evaluated at, before, 3, 6 and 12 months after surgery.

Results: FBS, HbA1c, insulin, C-peptide, and HOMA-IR were significantly improved 3 months after surgery regardless of operation type and the significant improvement in all measured values, except HbA1c, was sustained until the postoperative 12 month. 3.1% of patients stopped medication for diabetes and had HbA1c < 6.0% and FBS < 126 mg/dL. 54.7% of patients decreased their medication, and had FBS < 126 mg/dL or HbA1c < 7.0%. In multivariate analysis, the good diabetic control was not associated with the operation type but the diabetic duration.

Conclusion: After gastric cancer surgery, diabetes was improved in more than 50% of patients during the first year after surgery and the degree of diabetes control was related to diabetes duration in each patient. However, the effect of gastric cancer surgery type on diabetic control should be further evaluated.

P.117 Oral and General Health Conditions in Class III Obese Patients

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Purpose: Obesity is increasing considerable in the world and most likely SHcontributes substantially to the burden of chronic health conditions. The aim of this study was to evaluate oral and general health conditions in class III obese patients.

Methods: The sample was composed of 72 obese patients, 10 males and 62 females, attending at Amaral Carvalho Hospital-Jau, Brazil. Body

mass index (BMI), dyslipidemias, blood pressure, glucose levels and gastroesophageal reflux disease and tobacco use were obtained from the patient's medical reports. Oral conditions evaluated were tooth loss and use/need of prosthesis. Data were analyzed using univariate analysis and Odds ratio ($P < 0.05$).

Results: The mean age was 38.65 ± 9.77 and BMI was 53.09 ± 9.39 kg/m². Patients with BMI 50 kg/m² or more presented 3.69 times higher chance of presenting diabetes ($p < 0.0003$) and 4.77 times of dyslipidemias ($p < 0.0001$). Diabetes patients showed more tooth loss and need prosthesis than individuals no-diabetes ($p < 0.0001$). The super-super-obese patients require especial attention in their general conditions and diabetes individuals in their oral conditions.

Conclusion: Based on these results, there is requirement for concerted efforts to prevent and treat obesity rather than just its associated comorbidities.

P.118 How Effective Is Concomitant Therapy for Helicobacter Pylori Eradication in Obese Patients Undergoing Gastric By-pass Surgery?

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Introduction: The high prevalence of Helicobacter Pylori (HP), 70.7%, in our obese population undergoing bypass gastric surgery (GB), and the finding that HP infection seems to have the potential to cause or aggravate foregut symptoms and to predispose to marginal ulcer post GB lead us to adopt a policy of HP eradication in this group of patients. Our aim was to assess the HP eradication rate by adopting a 14 days concomitant therapy at first-line treatment as proposed by the Maastricht IV consensus (4) in areas of high clarithromycin resistance rates – proton pump inhibitor bid, clarithromycin 500mg bid, amoxicillin 1000mg bid and metronidazole 500 mg bid.

Methods: Single centre prospective study over a 3 year period. Endoscopy and HP assessment (by histology or C13 urea breath) were performed at baseline and post treatment HP status was assessed by C13 urea breath test 4–6 weeks after the end of therapy.

Results: The study cohort consisted of 408 adult obese HP positive patients [(16.2% male / 83.8% female, age 40.6 (10.1) years] consecutively scheduled for HP concomitant therapy. HP was eradicated in 268 patients [65.7% (95%CI: 61.8%-70.1%)] and the eradication was independent of gender, age, endoscopic diagnosis and smoking status ($p > 0.05$).

Conclusions: Two weeks concomitant therapy did not achieve Maastricht recommended first-line acceptable HP eradication rates (at least 80%) in obese Portuguese patients undergoing GB.

P.119 The Impact of Bariatric Surgery on Idiopathic Intracranial Hypertensive Patients

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Introduction: The purpose of this study was to assess the potential impact of bariatric surgery on morbidly obese patients with idiopathic intracranial hypertension (IIH). In the literature there is limited data on the role of bariatric surgery in this patient group.

Methods: Between 2009–2012 a total of 5 patients with IIH who underwent bariatric surgery were identified from a prospectively collated database. Their symptomatology and medication were recorded pre- and post- operatively.

Results: All patients were female with a mean age of 45 years (range 34–51) and a mean BMI of 58 (range 43–75). They all had long standing IIH > 7 yrs, with associated debilitating symptoms (headaches, transient visual obscuration and pulsatile tinnitus). 5 patients underwent laparoscopic sleeve gastrectomy and were followed up of a mean period of 17 months. The mean BMI had reduced to 37. All patients remained having symptoms associated with IIH, but 4 of the 5 had improvement in their symptoms; specifically fewer attacks and reduction in the severity of their symptoms. In terms of treatment there was a marked reduction in patients requiring decompressing lumbar punctures and medications on average reduced by 50%.

Conclusion: Bariatric surgery may be an effective adjunct in the treatment of IIH in obese patients with benefits in terms of symptom resolution and reduction in therapeutic lumbar punctures.

P.120 Functional Assessment of Older Obese Patients Candidates for Bariatric Surgery

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Introduction: Obesity in the elderly is associated with exacerbation of functional decline that occurs with aging and therefore to loss of independence and autonomy impairing quality of life.

Objective: To describe profile functionality in obese elderly referred to a bariatric surgery program.

Methods: Patients with age 60 and BMI 35 underwent comprehensive geriatric assessment that evaluates co morbidities, medication use, and pain, mability to perform basic activities of daily living (ADL), instrumental activities of daily living (IADL) and the "Timed Upand Go" test (TUG) whose cut-off point was 10 seconds.

Results: 60 subjects with a mean age of 64.1 years (60–72) and 75% women. They had an average 121.1kg (72.7–204) and mean BMI 47.2 kg/m² (35–68.9). About 80% of patients had a BMI 40 and almost half (47.5%) reported some difficulty in IADL. 31 (77.5%) complained of daily pain. TUG test was compromised (>10 sec.) in half the population and the need for auxiliary instrument for walking in 10 patients (25%). No correlation was found between BMI and impairment of IADL or ADL in this study. Moreover, there was a significant association between impairment of IADL and TUG, $2 (1) = 8.12$ ($p < 0.05$), as well as impairment of IADL and complaint of pain daily, $2 (1) = 6.16$ ($p < 0.05$), and use of auxiliary instrument for walking, $2 (1) = 5.64$ ($p < 0.05$).

Conclusion: The prevalence of functional limitation in elderly candidates for bariatric surgery is high as well as complaints of dailypain. The association between impairment of IADL and use of auxiliary instrument and difficulty for walking emphasizes and demonstrates the importance of functional assessment in planning strategies for obesity treatment. Functional impairment should be considered a comorbidity in surgical indication.

P.121 Operational Cost of Obesity Surgery for Turkey

PRESENTER: G. Kockaya²

Co-authors: G. Ergin¹, K. Atikeler¹, M. Tatar³, M. Ozmen⁴, M. Gorgun⁵, H. Coskun⁶, H. Alis⁷, M. Sahin⁸, Y. Uresin⁹, F. Yenilmez¹⁰, B. Karadayi¹¹, A. Unal¹¹, O. Sener¹¹, M. Taskin¹²

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Introduction: Obesity and its comorbidities are among the primary challenges that health systems face globally. Obesity is rapidly becoming a problem in Turkey as well. Recent research has revealed that 30.3% of the population is obese (20.5% of males, 41% of females) of which 2.9% of the obese population is classified under the morbid obese category. The 2003 Burden of Disease Study also concluded that 26,006 deaths for males and 31,136 deaths for females could be averted by decreasing the ratio of obese population.

Objective: The objective of this study is to find out the economic impact of obesity with cost of surgical treatment of obesity for Turkey.

Methodology: Literature search and expert panel are the main methodologies used in the study. A comprehensive literature search was undertaken with key words in PubMed to find out the extent of obesity and its comorbidities and treatment methods in Turkey. An expert panel questionnaire form was designed after the literature search aiming at finding the cost. The form was sent to the experts in advance and a panel discussion was undertaken to reach a consensus. After the consensus building phase the cost of surgical treatment of obesity were estimated based on the price tariff declared by the Social Security Institution.

Conclusion: The conclusions of the study will be revealed in the conference.

P.122 Cost of Obesity for Turkey

PRESENTER: G. Kockaya³

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Objective: The objective of this study is to find out the economic impact of obesity with its comorbidities for Turkey.

Methodology: Literature search and expert panel are the main methodologies used in the study. A comprehensive literature search was undertaken with key words in PubMed to find out the extent of obesity and its comorbidities and treatment methods in Turkey. An expert panel questionnaire form was designed after the literature search aiming at finding the cost. The form was sent to the experts in advance and a panel discussion was undertaken to reach a consensus. After the consensus building phase the cost of obesity was estimated based on the price tariff declared by the Social Security Institution.

Conclusion: The conclusions of the study will be revealed in the conference.

P.123 Economic Value of Obesity Surgery for Turkey

PRESENTER: G. Kockaya¹

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Introduction: Obesity and its comorbidities are among the primary challenges that health systems face globally. Obesity is rapidly becoming a problem in Turkey as well. Recent research has revealed that 30.3% of the population is obese (20.5% of males, 41% of females) of which 2.9% of the obese population is classified under the morbid obese category. The 2003 Burden of Disease Study also concluded that 26,006 deaths for males and 31,136 deaths for females could be averted by decreasing the ratio of obese population.

Objective: The objective of this study is to find out the economic impact of obesity with its possible economic benefit of obesity surgery for Turkey.

Methodology: Literature search and expert panel are the main methodologies used in the study. A comprehensive literature search was undertaken with key words in PubMed to find out the extent of obesity and its comorbidities and treatment methods in Turkey. An expert panel questionnaire form was designed after the literature search aiming at finding the cost. The form was sent to the experts in advance and a panel discussion was undertaken to reach a consensus. After the consensus building phase the economic benefit of obesity surgery were estimated based on the price tariff declared by the Social Security Institution.

Conclusion: The conclusions of the study will be revealed in the conference.

P.124 Measure the Quadriceps Angle in Severe Obese Women

PRESENTER: S. Fabris de Souza¹

Co-authors: E. M. Ikegami¹, N. Primo Junior¹, J. Souto¹, S. Fabris Luiz¹

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Introduction: Obesity is a nutritional disorder related to the risk of developing musculoskeletal disorders, which affect specific joints of the lower extremities, as the knee.

Objectives: The aim of this study was to evaluate the influence of excess weight on the quadriceps angle of severe obese women.

Methods: Assessment of quadriceps angle was performed using computerized photogrammetry. Were evaluated 20 women, divided into two groups (G1 and G2), G1 with BMI 40 Kg/m² and G2 with BMI between 18.5 to 24.9 Kg/m². The images obtained by photographic records were analyzed in Image J software. Statistical analysis considered the Qui Quadrado (2) test, the Mann–Whitney test and Pearson correlation coefficient, with a significance level of p<0.05.

Results: According to the Pearson correlation coefficient was checked positive correlation ($p = 0.04$ and $r = 0.64$) between body mass index and bilateral quadriceps angle of the obese group, which shows that the higher the body mass index greater the quadriceps angle.

Conclusions: Excess body weight is associated with increased angle measurement quadriceps when comparing such as severe obese and non-obese patients. The increase in this measure predisposes to the development of pathologies of the knee joint, affecting the quality of life of these patients.

P.125 A Case Series Illustrating Successful Treatment of Obesity in Renal Transplant Patients with Sleeve Gastrectomies

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Introduction: Obesity is increasingly prevalent amongst renal transplant recipients and is a major risk factor for graft failure and mortality. Conservative and medical treatment options are relatively ineffectual in weight reduction and so bariatric procedures should be considered. Roux-en-Y Gastric Bypass has been reported in a case series to be successful in renal transplant patients. However, there is limited data on the use of sleeve gastrectomy (SG), a procedure with reduced morbidity, in these patients. This report represents the first case series of five obese renal transplant patients who underwent successful SG.

Methods: A retrospective review of notes was performed from a database of bariatric surgery at our centre.

Results: Five renal transplant patients had SG at our centre between November 2008 to August 2010 (table 1). Four were female and their mean age was 52±4 years. Weight loss Absolute percentage weight loss one year after surgery was 25±9 %, p<0.05. The mean %EWL was 0±19 %. No patient experienced any peri or post-operative complications. Co-morbidities Three patients had T2DM prior to SG. After one year all had improvements in their glycated haemoglobin allowing for down titration of their medication and one patient was able to stop their diabetic medication. There was a reduction in HbA1c of 1.3±0.5% from a baseline of 7.4±0.3%, p=0.04. With respect to hypertension, two patients were able to cease their antihypertensive medication.

Conclusion: This case series demonstrates that SG can be a successful treatment for obesity in patients with renal transplants.

Table 1.

Patient	Age	Gender 1=M, 2=F	Date of surgery	Weight (kg)		eGFR (ml/min)		HbA1c (%)	
				Presurgery	12 months	Presurgery	12 months	Presurgery	12 months
<u>1</u>	<u>57</u>	<u>1</u>	<u>2008</u>	<u>123</u>	<u>78</u>	<u>74</u>	<u>73</u>	<u>7.7</u>	<u>6.4</u>
<u>2</u>	<u>55</u>	<u>2</u>	<u>2009</u>	<u>128</u>	<u>89.2</u>	<u>53</u>	<u>67</u>	<u>7.1</u>	<u>5.4</u>
<u>3</u>	<u>57</u>	<u>2</u>	<u>2010</u>	<u>112</u>	<u>96.2</u>	<u>70</u>	<u>68</u>	<u>7.4</u>	<u>6.6</u>
<u>4</u>	<u>49</u>	<u>2</u>	<u>2010</u>	<u>102</u>	<u>77</u>	<u>47</u>	<u>50</u>		
<u>5</u>	<u>45</u>	<u>2</u>	<u>2010</u>	<u>100</u>	<u>80</u>	<u>49</u>	<u>49</u>		

P.126 The Effect of Severe Obesity in Lumbar Lordotic Angle in Women

PRESENTER: S. Fabris de Souza¹

Co-authors: N. Primo Junior¹, A. A Morita¹, E. M Ikegami¹, J. Souto¹

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Introduction: Obesity presents itself as a relevant factor for the changes in the lumbar spine, since fat accumulation causes mechanical loads on the intervertebral joints and predisposes body misalignment. The aim of this study was to evaluate and quantify the angle of lumbar curvature in obese and nonobese patients.

Methods: Were evaluated 20 women divided into two distinct groups, the obese group (G1) was composed of 10 women with a mean age of 43 ± 11 years, BMI 47.18 ± 5.04 kg/m², the nonobese group (G2) formed by 10 women with a mean age of 39 ± 11 years and BMI 23.31 ± 1.32 kg/m². Skin markers were placed on the spinous processes of the first and fifth lumbar vertebrae (L1-L5), the sequence volunteers were positioned and photographed in a sagittal view and angular evaluated by photogrammetry.

Results: There were no statistically significant differences in age and height in both groups (p>0,05). The angle of lumbar lordosis in the obese group was 30.24 ± 11.9 and the nonobese group had a mean of 13.49 ± 2.36.

Conclusion: Obese subjects had a higher angle of lumbar lordosis compared to non-obese group.

P.127 Impact of Two Levels of Severe Obesity on Osteoarticular and Functional Changes of Knee and Foot

PRESENTER: S. Fabris de Souza¹

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Obesity can promote a variety of musculoskeletal disorders and is associated with pain and functional disability. This study aimed to analyze the influence of two levels of severe obesity (40 to 50 kg/m² versus 50 kg/m² higher) on osteoarticular and functional changes of the knee and foot in candidates for bariatric surgery.

Methods: We analyzed 81 subjects which were stratified according to BMI in two groups, with BMI1 (40,0 to 49,6 kg/m²) and BMI2 (50,0 to 81,3 kg/m²). The population underwent radiological analysis for knee osteoarthritis (Kellgren-Lawrence scale); x-ray of the foot to measure the talus-first metatarsal angle

(T1M); footprint to calculate the Staheli index (SI) and functional questionnaires, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and Foot and Ankle Outcome Score (FAOS). Statistical analysis for categorical variables was performed the chi-square or Fisher's exact test (expected frequency 5). **Results:** The predominant gender was female (77,8%), mean age was 40,7 ± 10,0 years and mean BMI 50,2 ± 7,7Kg/m². There was a significant association between BMI/T1M (p = 0,03) and not significant for BMI / knee osteoarthritis and BMI / SI (p > 0,05). Pain and functional disability were equally prevalent in both groups (p < 0,05).

Conclusions: Superobesity promotes additional alteration of the morphology of the plantar arch, favoring the installation of pronated foot. It has an important influence on symptoms of pain and functional changes of the knee and foot.

P.128 Dealing with Short-Term Cancellations in Bariatric Surgery: Management Strategy

PRESENTER: R. Aguilo¹

Co-authors: C. Schwieber², D. Bushell¹, S. Agrawal¹, K. Devalia¹, S. Coppack¹, Y. Koak¹

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Introduction: Bariatric surgery patients who are cancelled at short-term (within two weeks of the surgery date) are difficult to replace, not least because of 2–4 week pre-operative liver shrinkage diet. We aimed to identify the number of patients cancelled within a fiscal year period, the reasons for cancellation and whether the cancellations were avoidable.

Method: Review of a prospectively maintained database was carried out. All-cause and short-term cancellations during April 2012 to March 2013 were identified. Analysis of the case notes was performed by Bariatric MDT members. Descriptions of details were collected and formative plans for recommendations were made.

Results: During the year-long study period 704 cases underwent MDT review. 36 (8.3%) patients were identified with short-term cancellations. Of these, 13 (36%) were avoidable (3 prohibitively large liver, 2 anticoagulant errors by patients, 2 cancelled on the day, 2 requiring further investigations, and 4 others). The remainder of the cancellations were unavoidable.

Conclusion: In order to prevent short term cancellations four proposals were made as follows:

1. Screening investigations of vital signs, oxygen saturation, ECG, and capillary blood glucose measurement can be performed at the initial consultation to identify relevant medical conditions.
2. A "green light" mechanism can be introduced by which the MDT gives the go-ahead for surgery.
3. The patient pathway can be strengthened further by robust warning signs in Preadmission Clinic.
4. Unavoidable cancellations need to be taken into account in formulating the costs of providing a bariatric surgery service.

P.129 Stabilometric Analysis in Bariatric Surgery Candidates

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Aim: To analyze the postural stability in candidates a bariatric surgery and non-obese individuals.

Methods: A total of 50 subjects (age 28.7 ± 3.4 years, 71.4% female gender, BMI 36.1 ± 14.9 kg/m²) were analysed during a static posture trial on a force platform in standardized conditions. Subjects were stratified into two groups, GI, bariatric candidates (n = 25, age 30.1 ± 2.9 years, 71.4% female, BMI 50.2 ± 3.0 kg/m²), GII, non-obese group (n = 25, age 27.2 ± 3.5 years, 71.4% female, BMI 21.8 ± 2.4 kg/m²). Stabilometric analysis was performed in the standing position on the force platform for 30 seconds with eyes open and closed. The variables were antero-posterior (AP), mediolateral displacement (ML), elliptical area and average speed of oscillation. A descriptive analysis and Mann–Whitney test for the variables described, was performed using the statistics software (SPSS 21.0). Differences were considered significant when p < 0.05.

Results: Mann–Whitney test showed a significant difference (p = 0.04) for the displacement AP (eyes open and closed) and the average speed of oscillation (eye closed, p = 0.02), in group I than in group II. For variable elliptical area and medio-lateral displacement (eyes open and closed) there was no statistical difference. It was evidenced by Spearman correlation association between BMI and antero-posterior displacement (p = 0.03; rs = 0.56)

Conclusion: Despite the significance levels are not high, deserve attention. In this study, candidates a bariatric surgery had a postural instability compared with non-obese subjects.

P.130 Comparison of Children of Obese Mothers and Children of Operated Mothers (Preliminary Data)

PRESENTER: M. Pufal¹

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Introduction: Besides the high probability of genetic inheritance to gain body fat mass, children of obese parents grow up in a particularly favorable context for the development of phenotypic evidences. Genetic studies have hypothesized that both epigenetic modifications, caused by intrauterine conditions of obese mother, and genetic variations may predispose children to obesity. In order to understand the impact of epigenetic factors in the development of obesity, we conducted a cross-sectional study involving children of obese and mothers who underwent bariatric surgery.

Method: Twenty-one and 12 children of obese mothers and operated mothers were evaluated respectively. The two groups were compared regarding time of delivery (pre-term and at term), newborn weight and mother total weight gain during gestation.

Results: There was a statistically significant difference when compared the babies' average weight in the group of operated mothers (group 1) 2,93 ± 0,29 Kg to that of obese mothers (group 2) 3,31 ± 0,52 Kg (P=0,018). The mothers total weight gain showed a tendency to be higher in group 2, 16,14 ± 7,03 Kg than in group 1, 12,25 ± 9,55 Kg, P=0,190. Babies from group 1 tended to born pre-term, 4 (33%), when compared to those from group 2, 2 (10%), P=0,102.

Conclusions: These preliminary data indicate a trend of operated mothers to gain less weight during pregnancy than obese women. Moreover, children born after surgery had lower birth weight and more prevalent preterm births. However, it is necessary to increase the number of individuals to confirm these results.

P.131 Dietary Intake and Body Composition Following a Laparoscopic Sleeve Gastrectomy

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Introduction: The irreversible removal of a substantial portion of the stomach, and a long-term possibility of gradual enlargement of the remaining portion of the stomach due to excessive dietary intake count as disadvantages of this procedure.

Methods: Study set comprised 37 subjects (29 females and 8 males) 24 to 68 years old. The subjects were obese patients with BMI 43.0 ± 4.9 kg/m², who underwent sleeve gastrectomy. Body composition was determined by DXA (Hologic, Discovery W). Dietary habits and intake frequency of selected food and beverage groups were monitored by a questionnaire method. Follow-up examinations were carried out in scope identical to the pre-operative examination, 6 and 12 months after surgery, respectively.

Results: The average patient weight loss 12 months after surgery was 31.7 kg. BMI was reduced by 11.1 kg/m², body fat amount was reduced by 21.4 kg. The lean body mass (LBM) was by 8.9 kg lower than before surgery. Excess weight loss was 55.2 ± 20.6 %. Patients reported reduced appetite ($P < 0.001$), increasingly regular food intake ($P < 0.001$), intake of more meal portions per day ($P = 0.003$) and a decrease in consuming the largest portions during the afternoon and evening ($P = 0.030$). Patients consumed less high-fat smoked meat products and distillates ($P = 0.021$; $P = 0.026$).

Conclusion: Sleeve gastrectomy and follow-up nutritional therapy resulted in a significant body weight reduction body fat in particular within one year after surgery. An improvement of certain dietary habits in patients was also registered.

P.132 Bariatric Patient Preoperative Education Session – Preparing for Surgery

PRESENTER: R. Aguilo¹

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Introduction: Preoperative education sessions for Bariatric patients help to increase their awareness of changes in lifestyle required after surgery. Our Preparing for Surgery Group (PfSG) is the second stage pre-operative nutrition education that is delivered by the Bariatric dietitians. Our aim was to ascertain if patients find PfSG helpful.

Method: A literature search was carried out using PICO for existing clinical guidelines for pre-operative patient education. A questionnaire survey was devised based on the ASMBS Allied Health Nutritional Guidelines for Surgical Weight Loss Patients to evaluate how the bariatric service at our unit is performing at the point of PfSG. The objectives were to answer these questions:

1. Is the education programme meeting any identified practice?
2. What do our patients think of this group session?

Results: Literature search using PICO found no standardised clinical guidelines for pre-operative patient education. 200 questionnaire forms consisting of 5 questions were collected from Nov 2010 to Jul 2011, inclusive. The mean score was 3.8 (out of 5) for providing enough information in the session, and 3.5 for pitching the session at the right level of understanding for pre-operative patients. Patients liked the session being informative, found it to be delivered well by the specialist dietitians and had their questions answered appropriately. Comments and suggestions by the patients were acted upon.

Summary: PfSG sessions are informative for the patients and well received. Questionnaire evaluation can be extended to examine the whole education programme.

P.133 A Descriptive Study on the Psychosocial Characteristics of Morbid Obese-Bariatric Surgery Candidates in Comparison with a Non-Morbid Obese Group

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Introduction: Morbid obesity has multi-negative consequences for psychological health. Individuals with morbid obesity present with problems in physical health/health, and eating behaviours. Compared to normal and non-morbid obese individuals, they have higher psychopathological symptoms. The aim of this study is to investigate how physical health, health/eating behaviour of morbid-obese bariatric surgery candidates (MO) differ from those of non-morbid obese individuals (NMO), and to further assess the prevalence of psychopathology in MO.

Method: Fifty participants (14 females/11 males in both MO and NMO; age:17–63 years, mean/sd:37.3-12.7; Body Mass Index:30.87-69.03, mean/sd:44.8-10.6) formed the samples. All completed The Demographic Information Form, Eating Attitudes Test. Psychopathology in MO were examined using Structured Clinical Interview for DSM-IV/Axis-I Disorders (SCID-I) and Structured Clinical Interview for DSM-III-R/Axis-II Personality Disorders (SCID-II).

Results: MO and NMO were significantly different in terms of physical health and health behaviour. Smoking and eating attitude/behaviour problems were higher in MO. Prevalence of Axis-I and Axis-II psychopathology in MO were 64% and 12% respectively. Most prevailing were past (52%) and current major depression (20%), dysthymia (16%), borderline (12%), and histrionic personality disorders (8%).

Conclusion: This study suggests that as morbid obese individuals seem to have higher problems in terms of health/eating status-behaviour than non-morbid obese individuals, and present with high prevalence of DSM Axis-I and Axis-II psychopathology, they have to be carefully observed before their bariatric surgeries. Evaluation of bariatric surgery patients' preoperative psychiatric-health-eating status may play an important role in maximizing successful postoperative outcomes.

P.134 Antioxidant and Antidiabetic Effect of Aqueous and Methanolic Extracts of Cistanche Tinctoria in Streptozotocin Diabetic Rats

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Introduction: The present study was planned to observe the antidiabetic effect of 'Cistanche tinctoria' in streptozotocin induced diabetes mellitus. This study was performed to study the possible role of indigenous medicinal plants in the regeneration of pancreatic b-cells in treatment of diabetes mellitus.

Methods: The aqueous (AC) and methanolic (MC) extracts were administered daily in doses of 200-mg/kg body weight to streptozotocin induced diabetic rats for a period of 21 days. The blood glucose levels were estimated before and 1, 7, 14 and 21 days after the administration of the extracts.

Results: The methanolic and aqueous extracts exerted a significant ($P < 0.0001$) antidiabetic effect in streptozotocin diabetic rats. By determination of blood glucose, total cholesterol, total triglyceride (TG) and total lipids, it revealed that the (MCE) has beneficial effects on the biochemical parameter in a way more effective than the ACE. Daily treatment with 200mg/kg body weight of MCE and ACE for 21 days not only brought a significant decrease on blood glucose level in STZ-induced diabetic rats, but also increased the hepatic glycogen content.

Conclusion: From this study it may be concluded that the aqueous and methanolic extracts of *C. tinctoria* causes antidiabetic activity in Streptozotocin induced in diabetic rats.

P.135 The effect of Ruta Graveolens and Beta Vulgaris on the Complications of Diabetes Caused by Zinc Deficiency

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Introduction: Zinc plays an important role in numerous essential processes including protein synthesis, nucleic acids synthesis, and carbohydrate and lipid metabolism, and it has long been recognized as essential for the activity of a wide range of enzymes. It is a constituent of various enzymes and proteins such as alkaline phosphatase, lactate dehydrogenase and carbonic anhydrase, steroid hormone receptors, and transcription factors. Zinc deficiency is associated with increases in bone mass and osteoblast DNA synthesis. It is required also for normal insulin metabolism. Therefore, it seems reasonable that changes in body Zn status could affect the production, storage and secretion of insulin. A relationship between Zn and insulin storage is also suggested by the finding that acute stimulation of insulin secretion in rats also reduces Zn content in the cells of the pancreas. Zinc may also regulate insulin sensitivity in peripheral tissues. Consequently, there are several reasons for suspecting that an abnormal Zn metabolism could play a role in the pathogenesis of diabetes mellitus and in some of its complications

Method: This study was carried out to investigate the effect of the methanolic extracts of *Ruta graveolens* and *Beta vulgaris* var *cicla* on experimental diabetes in albino Wistar rats fed on low zinc diet. Rats were injected intraperitoneally with streptozotocin, and divided into two groups; the first group was fed on zinc adequate diet (54 mg zinc/kg). The second group given low zinc diet (1 mg zinc/kg).methanolic extracts of *Ruta graveolens* and *Beta vulgaris* administered to diabetic rats for 21 days. rats.

Results: The results which have been obtained indicated that low zinc diet significantly decreased body weight gain; serum zinc concentration, and various tissues zinc level (liver, kidney, pancreas and femur). The findings were also showed that the mean serum glucose, serum lipids, serum triglycerides, serum cholesterol, serum urea, serum creatinine, serum uric acid and serum bilirubin concentrations were increased in low zinc animals as compared to their counterparts fed on an adequate zinc diet. In addition, the consumption of low zinc diet led to decreasing serum protein concentration and glutathione level in liver .Moreover serum transaminases (GOT,GPT) activities were significantly increased . Meanwhile, methanolic extracts of *Ruta graveolens* (*R. graveolens*) and *Beta vulgaris* var *cicla* treatment was ameliorated all the previous physiological and biochemical parameters approximately to their normal levels.

Conclusion: To conclude, this research demonstrated that *Ruta graveolens* and *Beta vulgaris* reduced the severity of diabetes development caused by zinc deficiency.

P.136 Diabetes Resolution Following Bariatric Surgery. Efficacy of Mini Gastric Bypass and Sleeve Gastrectomy

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Introduction: Type 2 diabetes mellitus is now a global health priority. The World Health Organization estimates that between 2000 and 2030 the number of diabetic patients will increase by 114%. Although it is worth notice that bariatric surgery could treat the diabetes, little is known about which procedure should be preferred. In order to evaluate the efficacy of sleeve gastrectomy (LSG) and mini gastric by-pass (LMGB), we have designed a comparative study on obese diabetic patients who undergone bariatric surgery.

Methods: We have retrospectively evaluated a prospective database of all obese and diabetic patients who have undergone bariatric surgery, between January 2010 and January 2012, including for the analysis 15 LSG and 16 LMGB. We have assessed the efficacy of these procedures in the treatment of diabetes evaluating fasting blood glucose (FPG) and glycosylated haemoglobin (HbA1c) level.

Results: Demographical and clinical outcomes were similar between the groups (p = NS). Whereas no statistical difference were found, a trend towards better results was obtained among the patients who undergone LMGB in order to treatment of diabetes. More in details, after one year of follow-up, 87,5% of

patients who underwent LMGB and 72,5% of patients who underwent LSG have a normal value of FPG (p = 0,2). Similarly we obtained a normal HbA1c respectively in 75% and 63,3% of patients who underwent LMGB and LSG (p = 0,1).

Conclusions: Although more comparative studies are needed to give definitive conclusion, a trend towards better results was obtained after mini gastric bypass.

P.137 Application of the International Diabetes Federation and American Diabetes Association Criteria in the Assessment of Metabolic Control After Bariatric Surgery

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Introduction: The International Diabetes Federation (IDF) and the American Diabetes Association (ADA) have introduced specific criteria to define the "remission" of T2DM. Our objective was to assess for the first time the percentages of patients achieving the IDF and ADA criteria for optimization of the metabolic state and remission of T2DM respectively.

Methods: Data were collected retrospectively for body mass index (BMI), glycaemic markers, lipids, blood pressure, hypoglycaemia and medication usage from 396 morbidly obese patients with T2DM who underwent bariatric surgery in two centres and were followed up for two years.

Results: Patients underwent gastric bypass, sleeve gastrectomy, gastric banding or duodenal switch. Complete data on all parameters pre-operatively and at one and two years were available for 90 patients from the larger cohort. BMI, glycated haemoglobin, fasting glucose, total cholesterol, triglycerides, systolic/diastolic blood pressure and medication usage decreased significantly both at one and two years after surgery. At one year, 14% of patients achieved the IDF criteria of optimization of the metabolic state and 38% the ADA criteria for complete glycaemic remission, whilst at two years 8% and 9% satisfied these criteria respectively.

Discussion: According to the IDF and ADA criteria a relatively low proportion of patients achieved optimization of the metabolic state and remission of T2DM after bariatric surgery. These findings suggest that T2DM patients may benefit from the combination of bariatric surgery and adjuvant medical therapy to achieve optimal metabolic outcomes.

P.138 Leptin and Insulin Resistance After Sleeve Gastrectomy in Adults

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Introduction: Metabolic surgery is the evolution of bariatric surgery. Sleeve gastrectomy is an operation with encouraging results in long term weight loss. The aim of our study is to present the results of the operation in insulin and leptin resistance.

Method: Ten morbidly obese patients underwent sleeve gastrectomy. Blood samples were taken pre-operatively after overnight fasting and after a standardized meal in the fashion of a glucose tolerance like test . The same protocol of blood sampling was repeated three years after the initial surgery. Blood samples were analyzed for insulin, leptin and glucose.

Results: Average BMI decreased from 45.36 kg/m² to 30.05 kg/m². Leptin levels were significantly decreased with a trend of postprandial reduction of plasma levels after sleeve gastrectomy, opposed to the trend before the surgery. Initial blood glucose values were indicating impaired glucose tolerance, whereas after the sleeve gastrectomy blood patients had a more normoglycemic profile.

Conclusion: Sleeve gastrectomy is a safe operation which results not only in significant weight loss but also improves metabolism by restoring leptin and insulin tolerance.

P.139 Gastric Plication Surgery. First Experience in Ukraine

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Introduction: Some patients don't want to implant prosthetic devices or resect part of stomach. That's why we try to use a new operation for Ukraine - gastric plication.

Methods: 14 patients were operated. First 6 patients were operated by using laparotomy. Next 8 patients were operated laparoscopically. In both types of operations great omentum was dissected by dividing of short gastric vessels. Then great curvature was folded inward, with 2 suture lines to reduce the gastric capacity.

Results: The average preoperative body mass index was 41.6 kg/m² (range 35.9–48.1). Two patients were men, all other women. For patients completing 1 year of follow-up, the percentage of excess weight loss was 26.1%. No bleeding or infectious complications developed.

Conclusion: Our first experience has suggested that a reduction in gastric capacity can be achieved by way of laparotomic or laparoscopic plication of greater curvature of stomach. The early weight loss results have been perfect, especially at patients who underwent laparoscopic procedure. The use of laparoscopic gastric plication can be recommended as a first line bariatric procedure.

P.140 Effect of *Cistanche Tinctoria* Aqueous Extract on the Maternal-Fetal Outcome, Oxidative Stress Status and Lipid Profile in Streptozotocin-Induced Diabetic Rats

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Introduction: *Cistanche tinctoria* (Desf.) Beck., commonly known as « danoun », is widely used in Algerian Sahara folk medicine for the treatment of diabetes.

Aim of this study to evaluate the effect of *Cistanche tinctoria* aqueous extract treatment on maternal lipid and oxidative stress profile, reproductive outcomes, and also fetal anomaly incidence from diabetic and non-diabetic rats.

Materials and methods: Virgin female Wistar rats were injected with 50 mg/kg streptozotocin before mating. Oral administration of an aqueous extract of *Cistanche tinctoria* was given to non-diabetic and diabetic pregnant rats at dose of 200 mg/kg from 0 to 19th day of pregnancy. At day 20 of pregnancy the rats were killed and a maternal blood sample was collected for the determination of biochemical parameter. The gravid uterus was weighed with its contents and fetuses were analyzed.

Results: Oral administration of the aqueous extract (200mg/kg) produced a significant decrease on blood glucose in STZ diabetic rats ($p < 0.001$) the blood glucose levels were nearly normalised 2 weeks after daily repeated oral administration. No height significant changes observed in normal rats. In diabetic dams, plant treatment caused reduced cholesterol, triglycerides and LDL levels, and decreased resorption, placental weight, placental index, and fetal anomalies as

compared to diabetic group. The fetuses from diabetic rats treated with *Cistanche tinctoria* extract had lower frequency of skeletal anomalies as compared to diabetic group.

Conclusion: *Cistanche tinctoria* treatment had hypoglycemic effect, contributing to reduce incidence of internal anomalies in offspring from diabetic dams.

P.141 Improvement of Glycemic Control in the Gastric Cancer Surgery Patients with Type 2 Diabetes

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Introduction: The aim of this study is to evaluate effects of gastrectomy and reconstruction on diabetes control in patients with type 2 diabetes mellitus (t2DM) and gastric cancer.

Methods: We retrospectively collected data from 44 patients with gastric cancer diagnosed t2DM and preoperatively medicated, from June 2001 to February 2008. All of patients underwent curative gastrectomy for primary gastric cancer and laboratory data were measured after surgery.

Results: Subtotal gastrectomy with gastroduodenostomy (BI) was performed in 11 patients, subtotal gastrectomy with gastrojejunostomy (BII) in 8 patients, and subtotal or total gastrectomy with Roux-en-Y (R-Y) in 25 patients. Changes of fasting blood glucose (FBG), HbA1c and liver enzyme after surgery is not significant. But, 35 patients (79.5%) stopped or reduced medicine for diabetes. Fourteen patients (32%) stopped medicine and had normal HbA1c levels and FBG. Depending on reconstruction type, BII and R-Y was more effective in glycemic control than BI. ($p = 0.011$)

Conclusion: After gastrectomy and foregut bypassed reconstruction, diabetes was improved. More clinical study and evaluation was needed for glycemic control mechanism.

P.142 Prospective Clinical Trial of Laparoscopic MGB/One Anastomosis Bypass versus Roux-en-Y Gastric Bypass for Morbid Obesity

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Although Roux-en-Y gastric bypass (RYGB) is considered by many to be a good bariatric procedure, there are numerous reports of its limitations. The Laparoscopic Mini-Gastric Bypass/One Anastomosis Bypass (M1Bypass) is a newer procedure that is now being done with increasing frequency around the world.

Aim: To assess the efficacy and safety of Mini gastric Bypass versus RYGB in the treatment of morbid obesity and obesity-related comorbidities.

Material And Methods: 100 morbidly obese patients were treated with either RYGB (50 patients) or M1Bypass (50 patients). Both groups were comparable regarding age, gender, body mass index (BMI) and comorbidities. The follow-up period was 6 to 12 months.

Baseline and 6 and 12 month outcomes were analyzed including assessment of percent excess weight lost (%EWL), reduction in BMI, morbidity (minor, major, early and late complications), mortality, reoperations, comorbidities and nutritional deficiencies.

RESULTS: There was no 30-day mortality and no major complication rate. Minor complication rate (2% after RYGB and 1% after Mini gastric Bypass). Early reoperations after RYGB and after M1Bypass were not there. Weight loss was significant after RYGB and M1Bypass the difference between both groups at 6 and 12 months of follow-up. At 12 months %EWL in RYGB and M1Bypass groups was 55% and 65% respectively. The overall prevalence of comorbidities and nutritional deficiencies is 5%.

Conclusions: Both M1Bypass and RYGB produce significant weight loss at 6 and 12 months after surgery. The M1Bypass has the advantages of decreased complexity shorter operative time, less bleeding, shorter

hospital stay, greater weight loss and easier revision, if necessary. present study reports on a trial comparing M1Bypass and RYGB in an active bariatric practice tertiary healthcare system of India.

P.143 Laparoscopic Sleeve Gastrectomy to Correct Failed Gastric Banding

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Introduction: Gastric Banding is a frequently performed bariatric procedure with a high failure rate. Laparoscopic Sleeve Gastrectomy (LSG) could be a good option to correct failed gastric banding. Aim of the present study is to evaluate whether to perform Laparoscopic Banding Removal (LBR) + LSG during the same intervention or at different time.

Methods: From January 2011 to December 2012 all patients undergoing either LBR + LSG at the same time (Group 1) or LSG after having band removed before (Group 2) were retrospectively reviewed and compared using the student *t* test and the paired samples *t* test.

Results: During the study period, 24 patients underwent LBR + LSG at the same time (Group 1) and 18 underwent LSG after having band removed a few months before (Group 2). Before surgery, BMI was significantly higher in Group 2 ($p < 0.05$): 45.2 ± 4.7 kg/m² versus 35.9 ± 7.8 kg/m². Time of intervention was similar ($p = 0.97$) between the two groups. No surgical complications were noted in both groups. After 18 months follow-up we observed a significant ($p < 0.05$) mean BMI reduction in both groups, with a lower value of BMI in Group 1 (24.6 ± 2.5 kg/m² versus 31.7 ± 9.5 kg/m²).

Conclusion: No significant differences were noted in terms of time of surgery or complications between performing LBR + LSG at the same or different times. Patients who underwent LBR + LSG during the same intervention had not weight regain after band removal and obtained better results in terms of weight loss.

P.144 Laparoscopic Sleeve Gastrectomy as Revisional Procedure for Failed or Complicated Laparoscopic Adjustable Gastric Banding: A Two-stage Technique

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Introduction: The aim of this paper was to review our experience on two-stage conversion from LAGB to Laparoscopic Sleeve Gastrectomy (LSG).

Materials and methods: From January 2008 to December 2011, 55 two-stage revisional LSG (10 M/45 F, mean age 44 years, mean BMI 42.7m/kg²) were performed. A control group of 277 primary LSG has been selected. Operative time, postoperative complications and weight modifications (%EWL) at 6, 12 and 18 months post-LSG were evaluated.

Results: The two groups did not differ in terms of age, gender and BMI. The mean operating time for band removal was 45 minutes for failed LAGB and 50 minutes for complicated LAGB ($p < 0.05$). The mean operating time for LSG was 78 minutes for revisional and 65 for primary surgery ($p < 0.05$). After revisional LSG we registered a complications rate of 23,6% (3 Clavien grade I complications and 10 Clavien grade II complications). In primary LSG group the complications rate has been 10.1% (22 Clavien grade II complications, 3 Clavien grade III complications and 2 Clavien grade IV complications). At 6

months the %EWL was 46,8 in the revisional LSG group and 51,3 in the primary LSG group ($p > 0.05$). At 12 months the %EWL was 66,6 in the revisional LSG group and 74,7 in the primary LSG ($p > 0.05$). At 18 months the %EWL was 74,2 in the revisional LSG group and 71,6 in the primary LSG ($p > 0.05$).

Conclusion: LSG is an effective revisional procedure for failed or complicated LAGB. A two stage approach reduce significantly the major postoperative complications rate.

P.145 A Single, Oral Dose of Corticosteroids Alleviates Postoperative Nausea after Laparoscopic Gastric Bypass (LGBP)

PRESENTER: L. Nordin¹

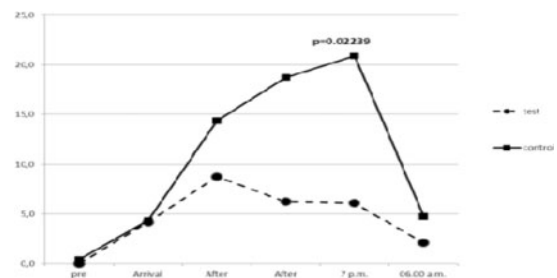
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Background: Nausea commonly occurs after general anaesthesia. Therapy with repeated injections with corticosteroids is known to be of benefit to patients. This study investigates the efficacy of a single and oral dose betamethasone 8 mg.

Patients and Methods: In a double-blind study 47 patients scheduled for elective LGBP were randomly assigned to receive either 8 mg betamethasone orally ($n = 24$) or served as controls ($n = 23$). Information on risk factors for postoperative nausea was noted. All patients were subjected to the same anaesthetic technique, with Propofol and Remifentanyl in a Target Controlled Infusion. Data were collected at baseline, on arrival to the recovery room (RR), and at four more time points during the first postoperative day. Nausea and fatigue were assessed using 100 mm visual analogue scales.

Results: Average operation time was 25–40 minutes. Neither demographics nor risk factors for nausea differed between groups. No differences between groups were found at any time point for fatigue. The number of given injections of antiemetics was the same for both groups. Patients in the control group had a higher nausea score compared to the betamethasone group from 4h postoperatively until 7 pm. This difference was significant ($p = 0.02239$).



Comments: A single and oral dose of Betamethasone significantly reduces nausea during the first 24 hours after LGBP. Further studies are needed to compare the effect of oral and intravenous administration.

P.146 Clinical Practice Effectiveness of Glidescope Video Laryngoscope in Morbid Obese Patients. Seven Years of Experience

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Introduction: The everyday clinical value of Glidescope Video Laryngoscope (GVL) in morbid obese patients is poorly characterized. Our airway management algorithm includes GVL as the primary technique for intubation in

all patients with Body Mass Index (BMI) over 40kg/m². This is a retrospective review of its clinical use.

Methods: We recorded all the GVL intubations attempted from December 2005 until December 2012 on patients with BMI above 40kg/m². We analyzed the success rate of GVL intubation, the Cormack-Lehane view achieved and the adjunct devices used for intubation after GVL failure. The incidence and character of complications associated with GLV were also recorded. Finally, predictors of GLV intubation failure were determined using a logistic regression analysis.

Results: We recorded 3228 cases with BMI between 40kg/m² and 82kg/m². Nineteen cases were excluded because awake fiberoptic intubation was used as primary technique. Overall success was 98.7% (3170/3209). Success for patients with predictors of difficult direct laryngoscopy was 98.6% (2557/2593). Cormack- Lehane view was I II: 92.6% (2973/3209), III:6.6 % (211/3209), IV: 0.8% (25/3209). Fiberoptic intubation with the help of GVL or alone was used in 30/39 and 9/39 failed intubations respectively. Complications included minor soft tissue injuries in 0.34% (11/3209) and pharyngeal injury in 0.2% (7/3209) cases. The strongest predictors for GVL failure was alteration of neck anatomy due to radiation, scars, or mass and thyromental distance less 4cm.

Conclusion: GVL seems to be an excellent choice for airway management in morbid obese patients. However, extra care should be given in patients with altered neck anatomy.

P.147 Utility of Awake Endoscope Tracheal Intubation in Gastric By-pass

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Introduction: Anesthesia in bariatric surgery patients should be safe so is very important reduce the risk. One of the techniques that we thought could be safer is awake tracheal intubation with bronchoscope.

Objectives: The main objective is to reduce or even eliminate the risk during the tracheal intubation, without problems of poor oxygenation during this maneuver. Also to have sufficient experience in order to use this technique in other patients with difficult airway intubation.

Methodology: Eligible patients are all gastric by-pass done in the past 5 years in our hospital, approximately 200. The technique of intubation in awake, half sitting, under sedation, with flexible fiberoptic scope and vision monitor was performed to all the patients. The technique was explained in the preanesthetic visit, and why we do it. We do not exclude any patients. Once in the operating room, patients are premedicated with atropine and midazolam, then were instilled lidocaine spray on the tongue and its base, and continues to sedation based infusion of remifentanyl, along with oxygen nasal cannulas. As we advanced the fiberoptic we instilling, through an epidural catheter that goes through the working channel, lidocaine 2% (spray as you go) in all structures (epiglottis, arytenoids, cords and trachea), when the carina is seen the endotracheal tube is introduced at the time of a deep breath. It is found that the tube is in the air way by obtaining capnography, and the patient is asleep. After completing the intervention, in the first postoperative day, they were asked for comfort during intubation.

Results: 100% to achieve intubation without desaturation or hemodynamic changes. The subjective sensations of patients were not unpleasant in all of them except one patient that reports shortness of breath and nervousness. All we objectify in the maneuver was a coughing fit in almost all patients. It has given us enough experience to deal with other cases of difficult airway acces.

Conclusions: A wake fiberoptic tracheal intubation in patients about to undergo bariatric surgery is the first choice to minimize the risks of such intubation without causing trauma to the patient. It's important to be performed by experienced hands.

P.148 Is There a Co-relation Between Difficult Airway and BMI- Prospective Analysis in 150 Bariatric Cases

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Introduction: 150 consecutive cases of patients who underwent laparoscopic sleeve gastrectomy for morbid obesity were included in the study. Only patients with BMI more than 40 were included in the study .difficult intubation were graded as Grade A, Grade B, Grade C. Grade A-successful intubation use of McCoy blade, Grade B successful intubation using Intubating bougie and Grade C using Fiberoptic bronchoscope. Mallampatti grading was done in all 150 patients as part of routine preanaesthetic checkup. All patients were intubated by same anaesthetist and in the same theatre settings

Methods: of the 150 patients difficult airway was encountered in 60 patients. Of these 37 patients fell under GradeA,19 patients were under Grade B ,5 patients fell under GradeC.BMI and Mallampatti grading of patients with difficult airway were compared.

Results: there was no relation between BMI and difficulty of intubation. In other words an increase in BMI did not predict possibility of difficult airway. How ever there was a direct relation between severity of Mallampatti score and grade of difficulty of intubation

Conclusion: For an anaesthetist it would be logical to assume that more the BMI the more the chance for difficult intubation. However our experience show that there is no relation between BMI and difficulty of intubation .Mallampatti grading proves to an excellent predictor of difficult intubation.

P.149 Is Esophagogastroduodenoscopy Prior to Roux-en-Y Gastric Bypass Really Mandatory?

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Introduction: Roux-Y Gastric Bypass is often used in surgery for morbidly obese patients. Postoperative anatomy is altered by creating a remnant stomach, inaccessible for future Esophagogastroduodenoscopy (EGD). There is no definite consensus about preoperative assessment of the stomach. Some institutions choose to investigate the future remnant stomach by EGD, others do not. Aim of this study is to quantify the yield of preoperative EGD in our institution.

Methods: Patients, planned for laparoscopic Roux-Y Gastric Bypass (LRYGB) from December 2007 until August 2012, were screened by EGD. These files were reviewed for EGD results and comorbidities, medication and other patient characteristic. All data were analyzed.

Results: 662 patients (79% female, median age 44.2 years, average BMI 45.6) underwent preoperative EGD. In 341 patients no abnormalities were found (A), 115 had findings without consequences (B1), 109 (of 417) needed HP eradication therapy (B2), 90 needed treatment by proton pump inhibitors (B3) and 6 required follow up EGD (C). In one patient the operation was cancelled because preoperative EGD showed esophaguscarcinoma (D). Regarding the treatment consequences, the number needed to treat to find one serious abnormality (group C or D) is 95.

Conclusion: Based on our results and the literature we state that standard preoperative assessment by EGD is questionable. The number needed to treat is high. Undergoing EGD for patients is not to be taken lightly and also the economic burden of performing EGD in all patients is noteworthy.

P.150 The Effect of Gastric Bypass on Resistin, and Insulin Resistance in Morbidly Obese Individuals

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Introduction: Resistin as an adipocyte cytokine that is also secreted by the monocytes. It was proved to stand as an interface between metabolism and immunity in not only modulating inflammation, but also insulin resistance in morbid obesity. The circulating resistin levels were reported to be increased and significantly positively correlated to insulin resistance and inflammation. Aim of the work: The aim of this study is to determine and correlate the resistin levels, insulin resistance, and inflammation in morbidly obese before and after 6 months and year post the bypass procedures.

Methods: Serum resistin, hs CRP, and HOMA were determined in Fifty three morbidly obese 53 morbidly obese patients before Roux-en Y procedures and six and one year after the procedure. The results were compared to 30 healthy matched age and sex control group. The resistin levels were statistically correlated to the other parameters and to the BMI

Results: Serum resistin, HOMA -IR, and hs CRP were all significantly higher in the morbidly obese than the normal control before the procedures. Six month after the operation revealed an increase of resistin that was not correlated to the decrease of both hsCRP and HOMA-IR and excess weight loss. After one year follow up, the resistin level decreased and was significantly correlated with the decrease of the HOMA-IR and hs CRP, and excess weight loss.

Conclusion: Insulin resistance and inflammation and BMI are decreased independent of the resistin level after six month post Roux -en Y. However they are all positively correlated after one year post bariatric

P.151 Outcomes in Patients with T2DM Undergoing Laparoscopic Sleeve Gastrectomy at 1 Year Follow Up

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Introduction: Whilst the association between obesity and T2DM is well established, the potential of bariatric surgery to achieve glycaemic control has only more recently gained interest. The place of bariatric surgery in algorithms for treating diabetes is still being defined. It is the purpose of this study to add to the evidence by reviewing 74 patients with diabetes 1 year post laparoscopic sleeve gastrectomy

Method: A retrospective cohort analysis was performed 1 year post-operatively on 74 patients with T2DM. Included were 19 males and 55 females, mean age 46.7 with mean BMI 44.4 and mean pre-operative HbA1C 7.2 (range 5.3 – 11.4). Relevant patient parameters as defined by the International Diabetes Federation were assessed including HbA1C, blood pressure, % weight loss, impact on medication usage and occurrence of hypoglycaemia at 0 and 12 months

Results: All 74 patients experienced a reduction in pre-operative fasting glucose and HbA1C with a mean HbA1C of 5.7. 52 out of 74 patients had all hypoglycaemic agents ceased by their family physician or endocrinologist by 12

months. Mean % excess weight loss was 76.5% (range 25.9 – 122.3). Of 48 patient with comorbid hypertension 39 had achieved a BP <135/85. There were no reported occurrences of hypoglycaemia.

Conclusion: Sleeve gastrectomy results in objective clinical and biochemical improvements in glycaemic control and associated comorbidities in patients with T2DM. More data is required to conclusively evaluate long term maintenance of remission.

P.152 Effect of Roux-en-Y Gastric Bypass versus Laparoscopic Adjustable Gastric Band Operations on Resistin, Apelin and Visfatin Peptides

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Introduction: Operations which decreases food ingestion such as Roux-en-Y gastric bypass (RYGBP) and laparoscopic adjustable gastric banding (LAGB) are popular with restrictive effects and are performed in common recently. This study aimed to measure and compare apelin, resistin, visfatin levels in patients who underwent to RYGBP and LAGB.

Methods: Fifteen patients underwent to RYGBP, 15 to LAGB were included in study. Apelin, resistin, visfatin levels in blood samples obtained from patients were measured before and six months after surgery. Operations, complications developed in six months follow-up period, stay time in hospital, body weight before and six months after surgery were recorded.

Results: There was no significant statistical difference for age, gender, pre-operative BMI. Stay time in hospital for RYGBP was more than LAGB. There was no difference for weight loss ratio. Apelin plays role on obesity, glucose metabolism. Apelin levels were decreased after operation in both groups but there was no statistically meaningful difference. Resistin is a peptide causing insulin resistance via disturbing glucose production in liver with high blood levels in obese animals. Resistin levels were significantly decreased in LAGB, RYGBP but there was no statistically meaningful difference. Visfatin is an insulin-mimicking peptide acting by binding to insulin receptor, significant decrease in both groups after surgery but no statistically meaningful difference is observed.

Conclusion: A significant decrease was observed in both groups for resistin, apelin, visfatin values at six months after surgery but there were no significant difference. It seems that RYGBP, LAGB has similar effect on these peptides.

P.153 Inadequacy of BMI as Single Criterion for Bariatric Surgery: Age and Comorbidities Should Be Relevant for Selection

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Introduction: BMI-oriented indications to bariatric surgery lead towards an unrealistic load of procedures, with unacceptable expenses, complications and recurrences. (Livingstone EH, 2012; Gill RS, 2011; Weiner JP, 2013). Selection considering age and comorbidities offer substantial benefit to more

compromised subjects (Sjostrom L., 2013). We demonstrate that obese pts with high surgical risk may face bariatric procedures with good results.

Methods: We studied 200 DBP patients, 60 % included in stages 2/3 of Edmonton classification (Gill RS, 2011), which identifies the risk of mortality in the 3rd degree obesity: in comparison to 2/3, stages 0/1 include very low risk patients.

Results: Our stage 2/3 pts showed: age >50 yrs 50% and >55 30%; BMI > 50 70%; diabetes 40%; respiratory dysfunction 80%; hypertension 82%; other 15%. 20% underwent a second procedure; 20% postoperative ICU; 12% bronchoscopic intubation. No mortality; hospital stay was 15 days vs 7 of 0/1 stage. 2-yrs control showed no differences between the two groups. 93% diabetes, 70% hypertension, 90% respiratory insufficiency resolved.

Conclusion: The more compromised obese patients obtain very good results. Edmonton classification seems reliable in selecting cost-effectiveness. Ethically, waiting lists need to reflect these criteria, preventing deterioration of pts in critical conditions and adequately orienting the use of health resources. Surgery should be considered therapeutic rather than preventive. Inadequate weight loss frequently observed after some forms of procedures (Spivak H, 2012; Arapik K, 2012, Livingstone 2013) enforces this approach. A new score based on prospective studies may better define clinical guidelines.

P.154 Laparoscopic Sleeve Gastrectomy for Type 2 Diabetes Mellitus: 4 Years Experience from Kuwait

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Introduction: Type 2 Diabetes Mellitus (T2DM) comprises 90% of diabetics and is largely the result of excess body weight. Prevalence of T2DM in the Kuwaiti adult population is increasing. There is enough evidence in the literature to suggest that laparoscopic sleeve gastrectomy (LSG) produces effective weight loss and cure or improvement of co-morbidities such as T2DM. The objective of this study is to assess the treatment outcomes of LSG on patients with T2DM associated with obesity.

Method: A retrospective study on 1202 obese patients who underwent LSG at Al-Amiri Hospital from October 2008 to October 2012 was conducted. 15% found to be diabetic (n=185) were found to have T2DM preoperatively. (Data analysis-SPSS program).

Results: The mean age of the patients was 42 (10.4) years; 68% females; Median preoperative BMI was 46kg/m² (30.4– 87.4) and median postoperative follow up period was 18 (2 – 48) months. Pre and postoperative fasting blood glucose and HbA1C were measured. Resolution and improvement of T2DM was 53.3% (n=57) and 38.3% (n=41) respectively. %EWL was 72% at 1 year and 73% at 4 years. Duration based analysis showed that most of the resolved patients had diabetes for less than 5 years. Overall complication rate 5.4% and no mortality.

Conclusion: LSG resulted in a 53.3% remission of T2DM which is consistent with the international literature. LSG is more effective for the treatment of patients with short term duration of T2DM. Larger study with longer follow up is required to validate the results.

P.155 Proper Korean Ideal Body Weight Formula as a Postoperative Reporting Tool of Weight Loss After Laparoscopic Adjustable Gastric Banding

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Introduction: For the ideal body weight (IBW) used to calculate %EWL and %EBMI, metropolitan life table and 25 kg/m² is generally used, respectively. However, both the IBW and BMI25 are higher than that of an average Korean and are viable to cause a distortion in the bariatric surgery result report. The purpose of this study is to find the ideal IBW formula for a Korean.

Method: A survey about their desired weight was conducted on patients who undertook LAGB surgeries at Seoul 365mc Hospital. Methods like Broca, Devine, Robinson, Miller, Hamwi formula and Metropolitan life table were used to calculate various IBWs, and were compared to the patient's desired weight.

Results: 360 patients were enrolled in the study for 1 year. The average age, weight, height and BMI was 36.5, 95.3kg, 166.6cm, and 34.1 kg/m². The average desired weight and BMI was 60kg and 21.5 kg/m². Male and female patient showed large variations in desired weight (female 55.6kg vs. male 78.5kg, p<0.001). The Broca formula yielded an IBW of 57.3kg, Miller a 61.4kg, and metropolitan a 67.9kg, all showing statistically significant differences with the desired weight(p<0.001). The Devine formula yielded an IBW of 59.2kg, Robinson a 59.2kg, and Hamwi a 59.1kg, this time showing similar calculations to the desired weight.

Conclusion: The desired weight was most similar to the IBW calculated with Devine, Robinson, and Hamwi formula. Using the Devine, Robinson, and Hamwi formula is the ideal method rather than Metropolitan life table to report the results of a weight loss surgery in Korea.

P.156 23 Hour Stay Following Laparoscopic Roux-En-Y Gastric Bypass and Laparoscopic Sleeve Gastrectomy, Is It Safe and Achievable?

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Background: Bariatric surgery average length of stay (LOS) is reducing. High volume centres with standardised pathways and increasing experience are reporting shorter LOS. Increasingly patients are keen to be discharged next day after surgery.

Method: A prospective study was carried out of all patients who had a 23-hour stay (23HS) following Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) or Laparoscopic Sleeve Gastrectomy (LSG) during the last three years. All patients were reviewed early on the morning of the first post-operative day by surgeon, specialist nurse (CNS) and dietician. Those who were willing to go home and deemed fit were allowed. A dedicated telephone clinic was also arranged with the CNS at 3 days and two weeks after discharge. Criteria for 23HS. Included: 1.patient desire and willingness to go home; 2.tolerating oral fluids; 3.Minimal pain and no opiate analgesia requirement; 4.appropriate logistical support and care at home; 5.full understanding of early post-operative dietary requirements.

Results: In the first year being studied 8 (3.3%) patients had a 23HS. This increased to 15 (7.4%) in the second year and to 22 (12.4%) in the third year. 21 (47%) had a LSG and 24 (53%) a LRYGB. Mean age 43yrs (20–64) with 76% being female. Mean BMI 44.7 (35–61). 17(38%) patients were diabetic. There were no complications and no readmissions in this group.

Conclusion: 23 hour stay after LSG and LRYGB is becoming increasingly popular amongst surgeons and patients. Our results show that a tailored enhanced recovery pathway makes 23HS safe and achievable.

P.157 Significant Diabetes Resolution After Omega Bypass: A Two-year Follow-up

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Introduction: Laparoscopic Roux en Y gastric bypass resulted in significant weight loss and resolution in type 2 diabetes mellitus (T2DM). Omega Gastric bypass has been reported to be a simple and effective treatment for morbid obesity but little is known on its efficiency on T2DM.

Method: Between October 2006 and December 2012, 804 patients received an Omega Bypass in our comprehensive obesity surgery center. We identified 100 patients (12.4%) who suffered from T2DM at operation. Mean age was 48.8+/10.8 yo, mean preoperative weight 132.9 +/-28.6 Kg, mean BMI 47.1 +/-8.5 Kg/m². Mean preoperative HbA1C was 7.7 +/-1.9%. 8% (n=7) had no treatment, 37% (n=30) one, 32% (n=26) two, 7% three (n=6) and 14% (n=12) received insulin. The mean follow up was 26.4 months. The mean weight decreased to 97+/23.5 Kg, the mean BMI to 33.9 +/-7.7 Kg/m².

Results: Successful treatment of T2DM was defined by HbA1C<7% without treatment. Resolution happened in 87.6% (71/81) and reduction of treatment in 12.34%. Insulin could be stopped in 58.3% (n=7).

Conclusion: Laparoscopic Omega gastric bypass resulted in sustained weight loss with successful treatment of T2DM up to 87 % after two years. Long term data are now mandatory.

P.158 Indirect Costs to Society After Gastric Bypass (LGBP): A One-year Pre- and 2 Years Postoperative National Cohort Study

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Background: Obesity-related diseases cause direct and indirect costs. We studied the costs to public health insurance caused by absenteeism from work the years before and after LGBP.

Patients and methods: Payments from the Swedish Social Insurance Agency are centrally registered. Operations are monitored using the Scandinavian Obesity Surgery Registry (SOReg) covering >98 % of all operations in Sweden. Cross-matching these registries for all operations performed in 2010 (n= 7201) gave us complete data sets for 3970 unique individuals; analysis was performed on those with employment (n= 3264) on days of absenteeism from work during 365 days prior to and after operation. (The Swedish Board of Health and Welfare recommendation for recovering is 2–4 weeks.) Two-year postop data will be available in April. We also had data on comorbidities, standard anthropometry, educational level and annual income.

Results: Mean increase in sick-days for the first postop year was 15.5 full days. Patients undergoing preop. treatment for obesity-related comorbidity increased number of sick-days both pre- (30.7 vs. 48.6) and postoperatively (44.1 vs. 59.5). Patients with diabetes had more preoperative sick-leave than patients without (26.1 vs. 23.2) and this difference was increased postoperatively (55.9 vs. 42.3). Surgical access predicted length of convalescence; laparoscopic operation had 42.1 days postoperative sick-leave vs. 72.7 for open access cases, without any difference in preop BMI.

Discussion: The indirect costs of obesity surgery are small, but one year is not enough to show an overall reduction in societal costs. The two-year postoperative data will be interesting.

P.159 Oral Carbohydrate Provocation in Patients with History of Hypoglycemia-like Symptoms After Roux-en-Y Gastric Bypass

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Introduction: Roux-en-Y gastric bypass (RYGB) surgery is an effective weight reducing procedure with mechanisms of action through several physiological principles. After RYGB some patients experience symptoms suggestive of

hypoglycemia 1–3 hours after food intake. However, it is unclear if these symptoms are associated with objective hypoglycemia.

Methods: Eight RYGB patients with a history of hypoglycemia-like symptoms (SY) and eight patients with no symptoms suggestive of hypoglycemia (ASY) ingested a liquid carbohydrate meal of 443 kcal. Insulin, plasma-glucose, glucagon-like peptide 1 (GLP-1) and glucagon were assessed intermittently up to 180 minutes postprandial. In addition, pulse rate, blood pressure and perceived symptoms (Sigstad scale) were assessed at each time point.

Results: Plasma glucose at 120 min was lower in the ASY compared to the SY group (group means being 2.4 mmol/L vs. 3.0 mmol/L, $p=0.050$). The ASY group had larger reduction in plasma glucose than the SY group from preprandial to 120 min post meal (2.2 mmol/L vs. -1.1 mmol/L, $p=0.011$). The concentrations of insulin, GLP-1 and glucagon did not differ significantly between groups. Blood pressure was on a similar level between groups, but the area under the curve (AUC) for pulse rate was larger in the SY than ASY groups (13009 vs. 11569; $p=0.038$). The SY group reported more symptoms than the ASY group during the test ($p=0.050$).

Conclusion: Patients with history of hypoglycemia-like symptoms after RYGB neither demonstrate lower plasma glucose nor greater insulin response compared to asymptomatic patients in response to a liquid carbohydrate meal, but perceive more symptoms.

P.160 Variation in Public Funding for Bariatric Surgery in England: Turn for the Worse?

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Introduction: NICE clinical guideline for obesity is the benchmark for public funding of obesity services in England. There is a growing perception that the criteria for funding bariatric surgery have become tighter recently. The aims of this study were to review the funding criteria of Primary Care Trusts (PCTs) in England for the last financial year 2011–12 as compared to 2009–10.

Methods: We sent out questionnaires to all 147 PCTs in England asking about their funding criteria for bariatric surgery and requested the number of procedures that were funded in the two financial years.

Results: 124/147(84.4%) PCTs replied to our questionnaires, of which 3 provided data only for the last financial year. The number of PCTs who fund surgery in line with NICE guideline reduced significantly from 69/121(57%) in 2009–10 to 36/124(29.03%) in 2011–12. The funding of surgery was also variable in the presence of co-morbidity with differing BMI threshold for individual co-morbidity as shown below:

	BMI without Co-morbidity			BMI with Co-morbidity			
	40+	50+	No funding	35-40	40-45	45-50	50+
Year, 2009-10	58%	27%	15%	63%	6%	23%	8%
Year, 2011-12	30%	46%	24%	47%	14%	30%	9%

60/121(49.6%) PCTs provided the number of procedures that were funded in the two financial years. The numbers of funded procedures reduced from 2783 in 2009–10 to 2486 in 2011–12.

Conclusion: This study demonstrates that there is variation in the funding criteria for bariatric surgery on the NHS in England which has become more stringent recently. This study is the first comprehensive review of funding for bariatric surgery in England.

P.161 Use of Upper GI Series in Preoperative Evaluation is Helpful, and Not just for the Anatomy

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Introduction: GERD and hiatal hernia are well known obesity related comorbidities. Upper GI series (UGIS) are performed as preoperative workup before bariatric surgery. Aim of study is to evaluate usefulness of UGIS and clinical correlation with GERD and hiatal hernia.

Methods: Chart review of bariatric surgery patients between Dec2010 and Jan2012 from single surgeon practice.

Results: 642 patients underwent primary bariatric surgery. Average age was 44(sd = 12), 75%female, 45%Hispanic, 28%African American, 23%Caucasian, and 4%other race. Surgery type was Gastric Bypass(67%), Sleeve(28%) and Band(5%). Hiatal hernia was seen in 36% on UGIS and repaired surgically. Reflux was present on UGIS in 32% of patients, and clinical GERD severity ranged from none (48%), mild(32%) and moderate-severe(20%). The overall accuracy of UGIS for correctly identifying hiatal hernia was 0.62. There was no significant correlation between radiological and clinical GERD. Patients with moderate to severe GERD were 1.88 times more likely to have a hiatal hernia at the time of surgery than patients without GERD (p=0.006). Clinically important findings (anatomic and functional abnormalities) were present in 46 patients (7.16%) that would need further workup (EGD, manometry, chest scan, gastric scintigraphy). 12 patients (1.6%), with esophageal dyskinesia (10 pts) or esophagitis (2 pts), could possibly be offered a nonrestrictive procedure.

Conclusions: Routine preoperative UGIS before bariatric surgery is of benefit. It reveals anatomical as well as physiologic pathologies in 7.16% that would change the surgical approach or postpone surgery with additional workup. Clinical GERD was associated with an increased incidence of hiatal hernias found intraoperatively

P.162 A Study on Nutritional Assessment After Sleeve Gastrectomy-Analysis of 50 Patients

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Introduction: Sleeve Gastrectomy is recognized as a safe and more physiological procedure for weight loss all over. This study analyzes the long term nutritional effects with and without supplementation into two subgroups.

Methods: A data of 50 Patients with BMI between 72 and 33 Kg/m² who underwent Sleeve Gastrectomy at our Center between 2008 to 2010. Study includes all patients receiving supplements for first year and then first subgroup continued on supplements and another group not receiving them. The effect on blood levels of Hemoglobin, Iron, Calcium, Vitamin B12 and Protein was analyzed at the end of each year.

Results: All 50 patients received supplements up to one year. At the end of one year the mean of Hemoglobin, Iron, Calcium, Vitamin B12 and Proteins are 13.9 gm %, 74.58ug/dl, 9.09mg/dl, 750pg/ml and 6.85gm/dl respectively. After one year follow up patients were divided into two subgroups, one continuing supplementation and other group on normal diet under supervision. No significant difference in the results was found between two groups after following up the patients for one further year.

Conclusion: Sleeve gastrectomy being a more physiological procedure may not require long term supplementation.

P.163 Bariatric Surgery on Super Obese Patients: Comparative Analysis of the Results with 35–50 BMI Patients

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Introduction: Bariatric surgery is nowadays the most effective treatment for obese patients. We noted recently an increasing demand of surgery for BMI >50 patients, that are more than 50% in our waiting list.

Method: We evaluated 90 patients who underwent bariatric surgery from January 2011 to June 2012 (BMI 35–50 n=51, group 1, BMI 50 n=49, group 2). The median BMI was respectively 44 (± 19.04s.d, range 37–48) and 56 (± 7.74, range 50–81). We calculated for the two groups respectively the BMI/ewl %, at six and twelve months, perioperative complications, operative time. We excluded patients who underwent gastric banding, re-do, patients lost to follow up.

Results: Group 1: BMI/ewl % at 6 months was respectively 32 (± 4.74 sd) and 54.5% (± 19.04 sd) and 28 (± 4.62sd) and 73% (± 17.06sd) at 12 months. Group 2: BMI/ewl% at 6 months was respectively 41(±5.76 sd) /44% (±10.93 sd) and 34 (±4.26) / 52 % (±12.62) at 12 months, p<0.004 Perioperative complications were 3 for each group. Operative time was 81 mn. (±18.1sd) for group 1 and 95 mn.(±22.1) for group 2, p=0.04.

Conclusions: bariatric surgery in BMI50 patients is as safe and effective as in BMI 35–50 patients. No great difference in terms of complication and operative time, obviously a statistically significant difference in terms of BMI/ewl%. Nevertheless, we consider mandatory the remittance of BMI ≥50 patients in a referential centers, in order to reduce the risks and improve the results.

P.164 Obesity and Metabolic Surgery in Type 1 Diabetes Mellitus

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Introduction: The prevalence of obesity and type 2 diabetes mellitus is increasing worldwide. Obesity surgery is an effective method for treating obesity and diabetes type 2. But little is known about bariatric surgery in type 1 diabetes.

Method: We report of eight female patients with diabetes type 1. Four patients underwent Roux-en Y gastric bypass. They were 33–50 years old with diabetes since 9–34 years. They controlled it with CSII (continuous subcutaneous insulin infusion), respectively two of them with an intensive insulin-therapy (ICT). One patient had sleeve gastrectomy. She was 38 years old, had had diabetes since 19 years and controlled it with CSII. Three patients had biliopancreatic diversion/duodenal switch. At surgery they were 42–52 years old, with diabetes since 8–25 years. They were treated with an ICT.

Results: Our results showed a remarkable weight reduction as well as an improvement in blood glucose control and the insulin requirement. Pre-surgery BMI ranged between 37,3-46,0 kg/m² and improved to 25,3–29,0 kg/m² one year after surgery. HbA1c decreased from 6,7-10,9% prior to 5,7-8,5 % one year post-surgery. The insulin requirement was reduced from 0,54-1,13 IU/kg body weight pre-surgery to 0,14-0,62 IU/kg after one year.

Conclusion: The results are impressive and show an improvement in insulin sensitivity following obesity surgery. However, an optimal blood glucose control still remains very important in the therapy of diabetes type 1 to avoid long-term complications. Obesity surgery is an effective method not only for type 2 diabetes but also for obese type 1 diabetes patients.

P.165 C.O.R.E: A Simple System of Risk Assessment for the Obese Patient

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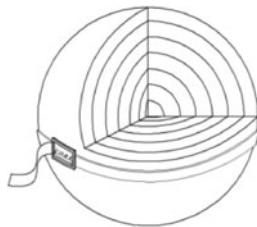
Introduction: Medical and surgical teams have not a routine, reliable measure to identify the risk assessment of the obese patient. BMI which is widely used to categorize and grade patient with obesity, only measures how big you are, not how sick you are. The purpose of our study is to validate a new

scoring system that adds a pathophysiological value to BMI evaluating all obesity-related co-morbidities.

Methods: We developed and tested C.O.R.E (comorbidity obesity-related evaluation) using medical data from patients who underwent operations at the PTV Departement of Surgery from January 2011 to December 2012. In our Departement, preoperative assessments include: blood test, bone densitometry, gastroscopy, pulmonary function tests, electrocardiogram and doppler US, liver US and psychological test. To each diagnostic investigation is assigned a score. We have assimilated obese patient to a sphere: comorbidities and risk factors are associated with an increased volume of the sphere. A large sphere indicates a high risk.

Results: Preliminary results support the use of our score system for accuracy and applicability in clinical practice.

Conclusions: C.O.R.E. could serve several important purposes: it would allow to identify the real state of health and the appropriate therapy for the patient and would also provide a target for surgical teams and researchers aiming to improve outcomes.



P.166 Superior Weight Loss and Improvement in Comorbidities After Duodenal Switch Compared to Gastric Bypass in Patients with BMI>48

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Introduction: Bariatric surgery achieves massive weight loss; however, in extreme overweight, the procedure of choice is unclear. In patients with BMI >48, we offer Duodenal Switch (DS) with 1m common channel, or Gastric Bypass (GBP).

Methods: Short and long-term results for consecutive 311 patients, 165 DS (BMI 55 (48–89), 69% women, open surgery) and 146 GBP (BMI 51 (48–64), 73% women, 30% laparoscopy) were taken from our prospective database. Results are presented in median (range).

Results: For DS and GBP, operating time was 150 (92–268) and 109 (57–239) min, respectively. Six DS, including 3 leakages from the gastric tube, and 2 GBPs were reoperated. Length of stay was 5 (3–109) and 4 (1–21) days. Excess weight loss was 73% vs. 60% at 1 year and 88% vs. 64% at 5y, resulting in BMI 31 for DS (n=40) and 36 for GBP (n=116). In accordance, plastic surgery had been performed in 55% and 26%, respectively. Obesity-related comorbidities improved overall in both groups. Glucose control (HbA1c) was superior after DS. As judged by SF 36, self-evaluated physical health improved in both groups. At 5y, patient satisfaction was very high, and in both groups, 95% would recommend surgery to a friend. Severe hypoproteinemi was treated by reversal of the excluded small bowel in 2 DS-patients.

Conclusion: Duodenal switch results in superior weight loss and improvement of comorbidities compared to gastric bypass. DS is, however, technically more demanding and patients need intensified follow up.

P.167 The Effects of Gastric Plications (GP) and Sleeve Gastrectomy (SG) on Patients with Type 2 Diabetes and Their Insulin Regimens

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Introduction: GP and SG are the techniques which are used in bariatric surgery. These techniques couldn't be examined sufficiently because of the comorbidities and lack of long term studies. Our aim in this study is to examine the effects of the GP and SG operations on patients who have type 2 diabetes.

Methods: 89 patients (27,21%) have insulin resistance; n=28(8,56%) use oral anti-diabetics, n=26 patients use insulin (n=16 patients underwent GP, n=10 patients underwent SG). Follow-ups of these patients we evaluate the need of insulin. n=11(68,75%) who underwent GP and n=9(90%) patients who underwent SG have a significant decrease in insulin resistance and don't need insulin for treatment anymore.

Results: Type 2 diabetic patients who had GP and SG surgery lost weight and there are significant changes in their metabolic and endocrine profile. In our opinion to define the reason of decreased insulin resistance is a conclusion of losing weight or plication technique itself, more clinical researches and outcomes are needed.

P.168 Prevalence of Obesity and Overweight Among Mascarien Children (Algeria)

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Introduction: According to the World Health Organization (WHO) definition, the Overweight and obesity as an abnormal accumulation or excessive fat that may impair health. The importance of this problem makes a several references to the definition of the set for overweight and obesity. This study aims to assess the prevalence of overweight, obesity in a group of 9-10-year-old children using three references.

Methods: We performed this work on a sample of 1085 students (527 boys and 558 girls) aged 9 to 10 years. Anthropometric variables (weight, height) were measured for all students to calculate the body mass index (BMI). To define overweight and obesity we used three international references corpulence: International Obesity Task Force IOTF (2000), WHO (2007) and Centers for Disease Control and Prevention (CDC 2000).

Results: According to the references IOTF, WHO and CDC, the overall prevalence of overweight (including obesity) is (8794%, 12.35% and 10.88%) respectively. Obesity affects one (1.57% 4.52% and 3.78%) respectively. Overweight is more common in girls than boys, and it doesn't matter some reference corpulence applied.

Conclusion: The prevalence of overweight and obesity is increasing very rapidly in Algeria which requires completion curves Algerian local growth.

P.169 Revisional Surgery After Failed LAGB; Results of One Stage Conversion to RYGB in 195 Patients

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Introduction: The most performed restrictive bariatric procedure is the Adjustable Gastric Band (AGB). With large number of patients receiving an AGB, inevitably the number of complications increase. For many complications revisional bariatric surgery is necessary. This study presents the outcomes of one stage AGB conversion to a Roux-en-Y Gastric Bypass (RYGB) from our institution.

Method: Patients were retrospectively selected using a prospectively collected database. The AGB had to be in situ for at least one year and minimum

postoperative follow up had to be 12 months. The RYGB had to be performed as a one step procedure.

Results: 195 Patients were included. In total 175 (90%) procedures were performed without perioperative complications and only 8 (4%) patients required re-operation within 30 days. Mean Excess Weight Loss (EWL) increased from 25% (± 26.0 (50;120%)) before conversion to RYGB to 60% (± 21.2 (0;130)), 65% (± 23.5 (0;131)), 63% (± 24.2 (2;132)), 60% (± 24.1 (0;111)) and 53% (± 28.7 (39;109)) in the first five postoperative years.

Conclusions: Converting a AGB to a RYGB in a one stage procedure is a safe and feasible procedure with acceptable complication rates when performed in a specialized institution. The RYGB conversion results in a EWL of 65% after two years, however proper patient selection is of utmost importance.

P.170 Health-related Quality of Life in Patients With and Without Obesity-related Disease Before and After Gastric Bypass

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Introduction: The use of bariatric surgery in morbidly obese patients without any obesity-related comorbid conditions is controversial. This study aimed to explore changes in health-related quality of life (HRQoL) after bariatric surgery in patients with and without obesity-related disease.

Method: Patients who completed HRQoL questionnaires before surgery and at follow-up visits 1 and/or 2 years after surgery were included. Generic and obesity-specific HRQoL was measured with the Short-Form 36 Health Survey (SF-36) and the Obesity-related Problems scale (OP-scale). Obesity-related disease was defined as the presence of at least one of the following conditions: type 2 diabetes, hypertension, dyslipidemia, obstructive sleep apnea, gastroesophageal reflux disease and osteoarthritis. Linear mixed models were used to analyze repeated measurements in patients.

Results: A total of 232 patients were included, mean (SD) age was 41 (9.0) years, mean BMI 46 (5.3) kg/m² and 68% were women. 86 (37%) patients had no obesity-related disease. From baseline to two years after surgery, all aspects of HRQoL were significantly improved. The improvements in SF-36 scores were in the range of 18 (95% CI 14.1–20.9) to 38 (95% CI 33.7–41.4) in patients with obesity-related disease and 24 (95% CI 19.3–28.2) to 41 (95% CI 35.9–45.8) in patients with no obesity-related disease. Except from a small but not clinically important difference in one of the SF-36 domains, the changes in the two patient groups were comparable.

Conclusion: Gastric bypass surgery confers similar improvements in HRQoL in patients both with and without obesity-related disease prior to surgery.

P.171 Quality of Life After Laparoscopic Sleeve Gastrectomy with Jejunal Bypass Based on Bariatric Analysis and Reporting Outcomes System (BAROS)

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Introduction: Sleeve Gastrectomy with Jejunal Bypass (SGJB) is performed in our institution since 2004 for the treatment of obese

patients. This technique has been subjected to evaluations in terms of weight loss and comorbidities resolution. The aim of this study is to assess the quality of life (QoL) of patients undergoing SGJB based on BAROS Moorehead–Ardelt survey.

Methods: BAROS was applied in a series of 92 obese patients operated with the three surgical techniques at DIPRECA Hospital in Santiago, Chile (SGJB, RYGB and LSG) between May 2012 and February 2013. Incomplete surveys were excluded. Patients had at least 6 months of follow-up. 24 met the inclusion criteria, operated between September 2007 and August 2012. To facilitate statistical analysis, was established as successful surgery an score>3 (Good, Very Good and Excellent). Scores<3 were defined as poorly evaluated (Regular and Poor).

Results: Mean time of follow up was 19.1 months. Mean score was 6.8 (Very Good). Of the 24 patients, 96% (23) evaluated the technique as successful (21%=Good, 29%=Very Good, 46%=Excellent). Only one had a score below 3 (2.9=Regular). None of them was classified as Poor.

Conclusion: Sleeve Gastrectomy with Jejunal Bypass is evaluated as a successful technique in improving quality of life of patients, based on BAROS Moorehead–Ardelt survey.

P.172 Early Survival Outcomes Following Bariatric Referral for 3766 Patients

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Introduction: Operative mortality rates following bariatric surgery are 0.3%. Short term mortality rates for bariatric patients not undergoing surgery are less well known. This study aims to compare the survival data for patients referred for bariatric surgery and to identify causes of death.

Methods: A prospectively maintained database was used to identify patients referred for bariatric surgery by their primary care provider based on NICE guidelines between April 2008 and May 2012. Survival status was assessed using the Connecting for Health website Batch Service database. Demographics, BMI and survival status was compared between the operative and non-operative cohorts. Cause of death was identified from hospital notes and GP records. Follow up was censored on 1/3/2013.

Results: 3766 patients were referred. 1046 underwent bariatric surgery (LAGB: 246, RYGB: 633, LSG: 169). The non-operative and operative groups were comparable for age (mean 43vs44 (range 17–78)) and BMI 48.1vs48.2 (range 33–98). 1in5 of the operated patients were male compared to 1in3 of the non-operative group. Mean follow-up was 30 months. There was no operative 30 day mortality. 4 died from surgically related late (>30day) complications and 2 from cardiac disease (0.6%). Of 2720 patients not undergoing surgery 27 died (1%). Cause of death was identified in 20 patients (malignancy 3, cardiac disease 8, sepsis 5, PE 2, other 2)

Conclusions: The risk of mortality for the non-operative group is 1% over 30 months. Whilst the risk of death following surgery is low the risk for the non-operative patients is higher than expected and in excess of the early mortality as a result of surgery.

P.173 Short-Term Outcome of Laparoscopic Gastric Bypass and Minigastric Bypass on Obesity Patients with Type 2 Diabetes Mellitus

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Objective: To evaluate the short-term outcome of laparoscopic gastric bypass and minigastric bypass on obesity patients with type 2 diabetes mellitus.

Methods: 50 obesity patients with type 2 diabetes mellitus received laparoscopic gastric bypass (n=25) or laparoscopic minigastric bypass (n=25), and their data of treatment outcomes were analyzed.

Results: The operations were all successfully performed without any complications. The average operation time was 125 minutes (range: 100 to 170 minutes). The patients underwent 1,6 & 9 months follow-up after operation. Diabetic indicators returned to normal without any medication and body weight reduced by on average of 24.3 kg.

Conclusion: Laparoscopic gastric bypass and minigastric bypass have good short-term outcome in the treatment of obesity patients with type 2 diabetes mellitus.

P.174 Remission or Control of Diabetes After Laparoscopic Gastric Bypass

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Introduction: Diabetes is a well-recognized and treatable risk factor for cardiac disease, and one of many co morbidities associated with obesity.

Objective: The aim of this study was to evaluate the clinical outcome of morbidly obese patients with documented diabetes who underwent laparoscopic Roux-en-Y gastric bypass.

Method: Fifty-nine patients with sufficient follow-up were included in the study. Mean preoperative duration of diabetes was 68 months. At 1 month postoperatively, mean excess body weight loss was 17 per cent with 29 patients (49%) showing improvement and 21 patients (36%) having remission of their disease. Mean excess body weight loss was 67 per cent at 12 months postoperatively with 25 patients (42%) showing improvement and 34 patients (58%) having remission of diabetes. Mean preoperative fasting blood glucose level decreased from 152 g/dL preoperatively to 100 g/dL at 12 months (P = 0.02), where as glycosylated hemoglobin decreased from 7.9 per cent to 5.7 per cent, respectively (P < 0.01). Patients with remission of diabetes had a shorter length of condition compared with patients with only improvement (43 vs 103 months, P < 0.01).

Conclusion: Weight loss associated with laparoscopic gastric bypass significantly improves diabetes control and results in discontinuation or marked reduction of antidiabetic medications in the majority of patients. Improvement in glucose control occurs as early as 1 month postoperatively.

P.175 Gastric Bypass V/S Sleeve Gastrectomy as a Treatment for T2DM in Patient with BMI>35

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Introduction: The prevalence of obesity-induced type 2 diabetes mellitus is increasing worldwide objective to evaluate the efficacy of Laparoscopic Gastric bypass (LGBP)v/s laparoscopic sleeve gastrectomy (LSG) on improving glycemic control of morbidly obese patients with type 2 diabetes mellitus.

Method: Study of 50 type 2 diabetes mellitus (T2DM) patients with BMI > 35 undergone LGBP & LSG Pre- and post-operative clinical parameters associated with diabetes mellitus 6 months & 1 Year after operation were evaluated. Data collected included weight loss (BMI, EWL%), diabetes control (FPG, HbA1C)

Conclusion: At 1 year after surgery, LSG seems to be as effective as LGBP for the management of T2DM in patients with BMI >35.

In addition to reducing the functional capacity of the stomach, this procedure eliminates the ghrelin-rich gastric fundus, which may play a role in its mechanism of action.

P.176 The Epidemiology of Obesity, A survey on 1000 Iranian Patients

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Introduction: The high prevalence of obesity in various ethnic groups, emphasize the importance of epidemiologic studies among these groups of patients. The recent study is an epidemiologic survey on one thousand patients referring to a private weight loss center in Tehran-Iran.

Method: The study was a cross-sectional survey which has been performed during a one year period from 2011 to 2012 in a private weight loss center in Tehran-Iran. One-thousand patients being admitted in our center, seeking for weight loss procedures were randomly selected and enrolled in the study. Patients underwent a thorough history, physical examination and psychiatric evaluation. Laboratory tests and also an abdominopelvic ultrasonography were ordered for all patients.

Results: The prevalence of overweight, obesity grades I and II and morbid obesity were 8.8%, 27.9%, 29.4% and 33.6% respectively. The presence of at least one comorbid disease, including diabetes, hypertension and hyperlipidemia were reported in 24.8% of the patients. Polycystic Ovarian Syndrome was reported in 19.3% of the female patients and weight-induced infertility was present in 7.5% of the married couples. Depression and anxiety disorders were reported in 40.4% of patients. The frequency of obesity was 3.7% in children between 10–18 years old, in which 28.9% were morbidly obese.

Conclusion: The high prevalence of obesity in the selected population, accompanied by comorbid diseases will acknowledge the necessity of accordingly preventive and treatment modalities. Prompt actions are needed to apply drastic changes in life style and dietary programs in order to decrease the trends toward a heavier world.

P.177 Mixed-Meal-Tolerance-Test (MMTT) Sober C-peptide as Marker for Hypoglycaemia Following Roux-en-Y Gastric Bypass

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Introduction: Hypoglycaemia following Roux-en-Y Gastric Bypass (RYGB) leads to various non-specific symptoms like fatigue, hunger, tachycardia sweating or weakness. While the real incidence of hypoglycaemia might still be underestimated, identification of patients at risk is crucial.

Methods: We performed a mixed meal tolerance test (MMTT) in 51 patients (46 female, 5 male, mean age 40±3,4 years, mean BMI 31,8 ± 1,7 kg/m²) at median 93 months (60–96) after gastric bypass performed between 2005 and 2007. At time of the study, all patients were off T2DM medication. The patients underwent a MMTT with blood testing for Insulin, C-Peptide and Blood Glucose at 10, 0, 15, 30, 60, 120 and 180 minutes. Hypoglycaemia was defined as a blood glucose value <=65mg/dl (= 3,6 mmol/L).

Results: Hypoglycaemia was found in 55% (28) of the patients (n=51) at 30 to 180 minutes of the test. The lowest blood glucose level observed was 38 mg/dl (= 2,1 mmol/L). No significant difference was found for sober Insulin comparing non-hypoglycaemic to hypoglycaemic patients 3,7 ± 2,2 ng/ml vs. 2,5 ± 1,4 ng/ml,

$p=0.205$). In contrast, sober C-Peptide (at – 10 minutes) was found to be significantly lower in patients with MMTT hypoglycaemia compared to patients with a normal MMTT result ($1,48\pm 0,39\text{ng/ml}$ vs. $2,213\pm 0,57\text{ng/ml}$, $p=0.004$).

Conclusion: Sober C-Protein was found to be significantly lower in patients presenting with hypoglycaemia than in patients with normal blood glucose levels at MMTT. Thus, sober C-Peptide might serve as a predictive marker for post gastric-bypass hypoglycaemia.

P.178 Relationship Between Tabaquism and Weight Loss After Bariatric Surgery

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Introduction: Bariatric surgery is the most effective treatment for obesity. Discontinuing tobacco use has been typically associated with weight gain. Our objective is to evaluate the relationship between tabaquism and weight loss in patients of bariatric surgery.

Methods: Retrospective analysis of prospective collected data of smokers undergoing bariatric surgery. Demographics, weight loss at 6, 12, and 24 postoperative months were evaluated. Tobacco use at the time of the operation and heavy smoker status was considered.

Results: 150 patients underwent sleeve gastrectomy between January 2006 and June 2012. Patients were classified as Smokers= 50 patients, Ex-smokers= 50, and Non-smokers= 50. Mean age: 42 yrs; 88 (59%) were female. Initial BMI was $46\pm 8\text{ kg/m}^2$. Mean follow up was 23months. For the total group, % EWL (% excess weight loss) at 6, 12, and 24 months was 65 ± 17 , 75 ± 20 , and 77 ± 22 respectively. Comparison of weight loss among groups there was not statistically significant difference. Smokers were then divided in Severe smokers= 13, and Non severe smokers= 37. Moreover, smoking status was reassessed after surgery within the smokers group: 29 patients were still actively smoking while 21 had abandoned the habit. Again, there was not statistically significant difference in weight loss when compared severe vs. non severe smokers, and actively smokers vs. patients who had quit smoking after the operation.

Conclusion: Short term results demonstrated that smoking status does not influence weight loss after bariatric surgery. Furthermore, abandoning the habit after surgery and severity of tobacco consumption did not affect the results either.

P.179 Incidence of Symptomatic Hypoglycaemia at 5 Years After Roux-En-Y Gastric Bypass (RYGB) Assessed by a Questionary Scoring System

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Introduction: Vertigo, attack of sweating, daze, tachycardia and loss of concentration are some of the various unspecific symptoms of hypoglycaemia after RYGB. In this study we screened gastric bypass patients for symptomatic hypoglycaemia using a questionary scoring system.

Methods: 51patients (46 female, 5 male, mean age $40\pm 3,4$ years, mean BMI $31,8\pm 1,7\text{ kg/m}^2$) at median 93 months (60–96) after gastric bypass performed between 2005 and 2007. Were included in this study. The patients had to fill out a questionary addressing hypoglycaemia symptoms as vertigo, attack of sweating, daze, weakness, loss of concentration, shivering, tachycardia, fatigue, hunger, headache and loss of concentration by a numeric scoring system. A minimum score of 9 (no symptoms) up to a maximum score of 84 (strong symptoms) could be reached. A score above the level of 42 was considered as symptomatic. A 5 days continuous glucose monitoring (CGM) was used for validation.

Results: By this scoring system, 25,5% of the patients (n=13) were assessed to suffer from symptomatic hypoglycaemia while 60,5% of the patients (n=31) were defined to be asymptomatic. 14% (n=7) of the patients were excluded due to insufficient completion of the questionary. All of the patients scored for symptomatic hypoglycaemia also showed hypoglycaemic episodes at the CGM. Nevertheless, in 70% of the asymptomatic patients, GCM also revealed hypoglycaemic episodes.

Conclusion: This questionary scoring system focusing on symptoms of hypoglycaemia had a 100% specificity to diagnose hypoglycaemia in RYGB patients but a sensitivity of only 30%.

P.180 Hypoglycaemia in Mixed Meal Tolerance Test (MMTT) and Continuous Glucose Monitoring (CGM) following Sleeve Gastrectomy (SG)

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Introduction: Hypoglycaemia is commonly observed, but might be underestimated after Roux-en-Y Gastric Bypass. As alterations have been found for the postprandial GLP-1 response, hypoglycaemia might also occur after SG.

Methods: We performed MMTT and CGM in 5 patients (3 female, 2 male, mean age 48 ± 27 years) at median 74 months (69–48) after SG. At time of the study, all patients were off diabetes medication and presented with a mean BMI $27,2\text{kg/m}^2$. 1Patient reported symptoms of hypoglycaemia. All patients underwent 5 days of CGM and MMTT on day 6 with blood testing for Insulin, C-Peptide and Blood Glucose at 10, 0, 15, 30, 60, 120 and 180 minutes. **Results:** Hypoglycaemia was found in 2 out of 4 (50%) patients at MMTT, while blood testing failed in 1patient due to poor vessels. The lowest blood glucose level observed was 62mg/dl ($3,4\text{mmol/l}$). In the patients with normal MMTT mean sober insulin at -10min was $11,5\text{ U/ml}$ compared to $3,115\text{ U/ml}$ in hypoglycaemic patients. Mean sober C-Protein at -10min was 3 ng/ml versus $1,7\text{ ng/ml}$. CGM showed hypoglycaemic episodes in all of the patients, without any correlation between hypoglycaemia, insulin or C-Peptide. MMTT and CGM confirmed hypoglycaemia in the patient who reported hypoglycaemia symptoms.

Conclusion: Within our very small group of patients, hypoglycaemia was confirmed by MMTT in 50% and by GCM in 100% of the patients. Thus, the incidence of hypoglycaemia seems to be massively underestimated after SG.

P.181 Hormone and Metabolite Profile After Reversal of Gastric Bypass

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Introduction: Gastric bypass (GBP) is currently the most common surgical treatment of obesity. Remission of obesity-associated type 2 diabetes is frequently observed long before substantial weight-loss. Clues to the enigma of change in glycemic control post-GBP may lead to pharmacological treatment of diabetes and obesity.

Method: We hereby describe a unique case with a GBP-patient with former diabetes. Due to abdominal pain the remnant stomach was examined by gastroscopy (normal finding) and a gastrostomy was placed. Mixed meals were given on three occasions: orally before GBP-reversal, through the temporary gastrostomy before GBP-reversal, and orally after GBP-reversal.

Results: Hormonal and metabolomics analyses revealed that GBP-reversal elevated levels of insulin, GIP, cholesterol and cysteine while levels of glucose, GLP-1, glucagon, ghrelin, fatty acid, ketone body and -hydroxybutyrate were lowered.
Conclusion: Our results suggest that reversal of GBP does not immediately restore the pre-GBP state.

P.182 Comparative Analysis of Sleeve Gastrectomy vs Gastric Banding and vs. Gastric Bypass in BMI <35

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Introduction: The surgical treatment of obese patients between 30 and 35 Kg/m² still remain under debate. Sleeve Gastrectomy (SG) has been recently introduced in bariatric surgery gaining an exponential use among surgeons, but its results in low BMI patients are still lacking. A retrospective comparison of prospectively collected data among I stage obesity patients submitted to different bariatric procedures (sleeve SG, gastric bypass [GBP] and adjustable gastric banding [LAGB]) is performed.

Methods: From a prospectively collected database 59 patients (15 M/44F, mean age 37+10yrs, weight 92+10kg, BMI 33+1 Kg/m², %excess weight 50+9) who underwent different laparoscopic bariatric procedures from 2002 to 2011 with a minimum 18 months of follow up have been selected. Patients were informed that they did not meet the current NIH guidelines for bariatric surgery and signed a special informed consent before surgery. Weight loss outcomes were registered yearly. 11/11 (100%) patients in SG group, 8/12 (66.6%) patients in GBP group and 20/36 (55.5%) patients in LAGB group had at least one comorbidity.

Results: Eleven I stage obesity patients were submitted to SG; at 1 year of follow-up they showed a mean weight of 70+11kg, BMI of 23+3 Kg/m², %EWL 87+22. They were comparable to 12 patients submitted to GBP at 1year (mean weight, BMI and %EWL of 75+9kg, 25.8+2.7 Kg/m², 64+24% respectively) (p=ns). SG patients showed better weight loss results at one year compared to 36 LAGB patients (mean weight, BMI and %EWL of 77+7kg, 29+3 Kg/m², 36+24% respectively) (p=.001). At two and three years, SG and GBP BMI and %EWL continued to be comparable and still better than those of LAGB (p=.001). There was no mortality. One GBP patient had a peri-anastomotic bleeding treated endoscopically. Three LAGB patients had band removal after a minimum of 3 years for insufficient weight loss. None of the patients presented with a BMI <18,5 Kg/m². All patients experienced improvement or remission of comorbidities.

Conclusions: Bariatric surgery is safe and effective in low BMI patients. Short-term weight loss of SG patients is comparable to GBP patients and better than LAGB patients.

P.183 Sleeve Gastrectomy and Type II Diabetes at 5 Years Follow Up

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Introduction: Laparoscopic sleeve gastrectomy (LSG) has become one of the most common technique of bariatric surgery. Regarding the long term results on type II diabetes there is only limited data in the literature. This retrospective study presents the results of LSG on type II diabetes and other comorbidities after 5 years follow up.

Methods: A total of 41 patients with type II diabetes (12 men and 29 women) and morbidly obese with mean BMI = 48.58 (range=36-82 kg/m²) who underwent LSG from 2005 to 2008 were analyzed. Changes in the status of co-morbidities at the end of 5 years were calculated. Complete remission was defined as complete cessation of treatment and improvement as a decrease of medication for type II diabetes.

Results: 5 out of the 41 patients need insulin to treat their diabetes. 10 patients were superobese (BMI> 50). The 5-year results found : complete remission in 26 patients (63.41%), improvement in 7 patients (17.07%), unchanged treatment in 5 patients. The follow up for this period was of 92.68%. For 21 patients the Hgb A1C levels were available preoperatively and 5 years later with an average difference of 1.96%. 12 out of 22 patients with preoperative hypertension had a complete remission. Sleep apnea was cured in 25 out of 34 patients (73.52%). The postoperative morbidity was represented by: 1 case of fistula (2.44 %) and 2 cases of bleeding (4.88%). Later we had one case of umbilical hernia, 1 case of cholelithiasis and 11 cases of GERD (26.82%)

Conclusion: In our experience, the LSG is an effective procedure in terms of remission of type II diabetes and other comorbidities at 5 years follow up

P.184 A Prospective Study to Compare the Efficacy and Complications Associated with Laparoscopic RYGB and SG

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Aims and Objectives: 1.To study the incidence of morbidity and mortality associated with bariatric surgery. 2. To study the efficacy of bariatric surgeries in attaining weight eduction, controlling Hypertension, Diabetes Mellitus and Hypercholesterolemia.

Materials and Methods: The patients who were obese and were having a BMI of more than 32.5kg/ m² with or without co-morbidities and who were advised surgical treatment for obesity were evaluated. The bariatric surgeries done were laparoscopic sleeve gastrectomy and laparoscopic Roux n Y Gastric bypass. ATP III criteria was used for diagnosing metabolic syndrome. Patients were followed up for 6 months. Comparison of the groups done using Unpaired T test or Mann- Whitney test as per the results of Normality test. Association among study group is assessed with the help of Chi-Square test.

Results: The EBW lost at 6 months after RYGB and SG were 68.25% and 57.9%. RYGB and SG cured 100% and 70 % of hypertensives respectively. RYGB gave an 80% of complete remission and 20% partial remissions of Diabetes Mellitus while with SG it was only 37.5% and 50% respectively. Metabolic syndrome was cured 100% and 70% after RYGB and SG respectively. One of the SG patients had an episode of reactionary bleed and two RYGB patients had paralytic ileus. No mortalities were observed.

Conclusion: Both RYGB and SG are safe and equally effective Bariatric surgical options. Long term follow up is required to delineate their differences better.

P.185 Preliminary Evaluation of Ghrelin (Gh) Gene and Protein Expression in the Surgical Specimen, and Ghrelin Serum Concentration After Primary or Revisional laparoscopic Sleeve Gastrectomy (LSG)

PRESENTER: F. De Angelis¹

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Introduction: Gh plays a role in food intake and insulin secretion/suppression and is involved in weight-loss after LSG. The aim of this prospective study was to evaluate differences of the Gh-gene expressions and Gh-cells density in the LSG resected specimens.

Methods: 62 patients (mean BMI 42.6) underwent LSG (primary 45, revision 17. DMT2 10). TaqMan real-time quantitative PCR and immunohistochemical Gh expression were evaluated in fundus, body and pre-pyloric region of the specimens. RNA was extracted by using SV Total RNA Isolation System. RNA was reverse-transcribed in a final volume of 20uL using High Capacity cDNA Reverse Transcription Kit. Gh-gene expression in each areas of stomach was evaluated. Gh-protein expression was detected by immunohistochemistry in

FFPE tissues using anti-ghrelin antibody. For each area of resected stomach, ghrelin cells per high power field (x400) were counted and mean values were calculated. Total plasma ghrelin levels were obtained before and 1 month postoperatively in 31 Patients (Primary 25, revision 6, DMT2 4).

Results: The mean Gh-mRNA expression was 2,5 throughout the stomach. Immunohistochemistry showed a mean Gh cells percentage of 24,7% (fundus 27,3%, body 23,9%, antrum 22,8%) BMI was negatively correlated with protein and Gh-gene in tissues specimens. Gh cell density decrease from the proximal stomach to the distal stomach ($p < 0,007$). No significant differences in Gh-expression in primary vs. revisional LSG were found. A significant difference was found in the gastric body Gh expression in diabetes vs no diabetes 27,5% vs 22,9 % respectively ($p < 0,008$) One month after surgery, ghrelin serum levels decreased more in the revisional group (6 patients) (from 76,3pg/ml to 5,7pg/ml) than in the primary group (25 patients) (from 73,7 pg/ml to 15,1 pg/ml).

Conclusion: Gh-mRNA and Gh-cell density didn't show any statistical differences between primary vs revisional. LSG. Diabetic patients showed an higher Gh cell density in the gastric body than no diabetic. One month after surgery the decrease of Gh serum concentration is similar to primary and revisional group. These results support the evidence that mid-term EWL of revisional LSG are comparable with the primary and suggest the Gh involvement also in revisional LSG where eventual anatomical and physiological changes seems not interfere with Gh-expression and early serum concentration reduction.

P.186 Patterns and Predictors of Short-Term Weight Loss After Bariatric Surgery

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Introduction: By 2015 it is estimated that 36% of males and 28% of females aged between 21 and 60 will be obese. Bariatric surgery is a very effective treatment alternative for patients with morbid obesity but a proportion of patients fail to achieve successful weight loss. Our objective was to identify factors predictive of short-term weight loss following bariatric surgery.

Method: The study examined the prospectively collected data of 159 consecutive patients operated in a single center. Data included variables such as: age, gender, height, initial weight, height, co-morbidities, type of operation and subsequent BMI. Logistic regression was used to determine predictive variables.

Results: Mean body mass index (BMI) was $49.3 \pm 8.04 \text{ kg/m}^2$ ($37.1 - 82.4$). An independent samples t-test showed that the mean difference of excess body weight loss at one year between male ($62.5 \pm 13.07\%$) and female patients ($58.36 \pm 19.2\%$) was not statistically significant, 4.2% (95%CI, -3.2 to 11.6), $t = 1.12$, $p = .265$. There was a small correlation between the preoperative weight loss and the excess weight loss at one year, $r = .152$ that did not reach statistical significance $p = .087$. The mean difference of excess body weight loss at one year was not statistically significant between non-diabetic and diabetic patients, 5.36% (95%CI, -2.8 to 13.5), $p = .196$.

Conclusion: Predicting which patients are at risk of unsuccessful weight loss could help tailor the interventions to address the specific needs of this subset of patients.

P.187 The Association Between Deprivation and Metabolic Surgery

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Introduction: Poor health has been associated with areas of deprivation based on measures such as social resources and behavioural determinants. With the increase in the incidence of obesity and the associated metabolic diseases, we investigated the outcomes of metabolic surgery based on UK deprivation measures.

Methods: A prospective database was used to identify all patients that had undergone bariatric surgery between 2002–2012. Their demographic details, location area, type of surgery and percentage excess weight loss were analysed. The UK Index of Multiple Deprivation (IMD, 2010) and the IMD domain of the Health deprivation and disability (HDD) score were used to assess deprivation (where 1 is the most deprived in rank order and 32,482 is the least deprived).

Results: Data was included from 983 patients involving 3663 patient episodes, 178 male, 805 female. This comprised of laparoscopic gastric bands ($n=533$), gastric bypass ($n=362$), gastric balloons ($n=88$), banded gastroplasty ($n=2$). The mean and standard deviation of the deprivation scores and ranks according to procedures between 3 months and 3 years are shown in the table. The average percentage excess weight loss overall was 38% over a follow up period (3 months - 9 years). There was no correlation between weight loss and IMD/HDD rank scores. Post-hoc (Tukey) tests indicated that weight loss was more effective with gastric bypass than the other two procedures ($p < 0.001$).

	% Excess Weight Loss	IMD Score	IMD Rank	HDD Score	HDD Rank
Balloon	14.05±8.34	25.60 ±12.17	13112.40	-0.11±0.68	17077.59
Bypass	41.67±19.86	24.21 ±12.37	13427.09	-0.08±0.69	8208.20
Banding	22.95±17.65	24.74 ±13.05	13526.40	-0.15±0.78	17449.18

Conclusion: Patients regardless of deprivation score achieve good weight loss. Therefore, more resources may need to be invested in less deprived areas in terms of cause and effect so the benefit of metabolic surgery is attained.

P.188 No difference in Weight Loss Outcomes by Financial Class at Time of Bariatric Surgery

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Introduction: It is commonly felt that weight loss outcomes after bariatric surgery depend on follow up and post-operative interdisciplinary care. Access to this care may vary by financial class. Correlation between insurance status and positive outcomes over one year follow up have not been researched.

Methods: A retrospective review was performed from a prospectively maintained database from a surgical practice from 2003 until 2010. 2515 patient charts were analyzed comparing outcomes at 1 month, 3 months, 6 months and 1 year including percentage excess weight loss and percentage follow-up. The groups were separated by insurance status- private insurance, Medicare, Medicaid and Self-Pay.

Results: Overall follow-up at 1 year post-op was 50.14% (84.29 at 1 month, 61.35 at 3 months, and 55.03 at 6 months). Follow-up percentage was best among LABG patients (68.34% at 1 year $n=259$) and worst with LSG (28.92%, $n=204$). Self-pay patients had the best follow-up (56.9%, $n=413$) and private insurance was the worst (47.88%, $n=1602$). Weight loss outcomes agreed with prior studies and did not statistically vary by insurance status (LRYGB= 67.68%, LSG= 62.59%, LABG= 32.85%).

Conclusion: Self-pay patients and those that underwent LABG were most likely to follow up, while LSG and private insured patients were the least likely. Financial class did not appear to significantly effect weight loss outcomes.

P.189 Prevalence of Metabolic Syndrome in the Obese Indian

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Aim: The objective of this study was to determine the prevalence of type 2 Diabetes, hypertension and dyslipidemia in an obese Indian population

Method: this was retrospective analysis on 800 obese patients who presented at our centre for bariatric Surgery. Anthropometric measurements, pre-operative blood parameters, medications and duration of co morbidities were recorded.

Results: The median age was 42 years (range 16 - 75years). The median BMI was 44 kg/m² (range 29–88 kg/m²). All patients had a waist circumference the cut – off norms by WHO for Asians. The prevalence of all 3 components of metabolic syndrome was 11%. 28% had type 2 diabetes / 69 % of these were on oral hypoglycemic agents or insulin or both. 82% of these patients were on medication for hypertension. 28% were on medication for dyslipidemia.

Conclusion: Central Obesity is one of the major contributing factors for prevalence of major components of the metabolic syndrome. Routine investigative scanning and anthropometric measurements concentrating on central obesity should be undertaken to document presence of type 2 diabetes , hypertension and dyslipidemia in the obese Indian population.

P.190 Surgical Weight Reduction Improves Obesity-Associated Morbidity and Patients' Quality of Life

PRESENTER: D. Lapatsanis¹

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Introduction: Morbid obesity-associated medical conditions include pulmonary disorders, hypertension, diabetes mellitus type II, dyslipidemia and musculoskeletal pain.

Methods: Our team retrospectively reviewed 140 patients with morbid obesity, who had undergone two types of laparoscopic procedures; Sleeve Gastrectomy (SG), (n=73) and Total Vertical Gastric Plication (TVGP), (n=67), twelve to twenty two months, prior to the beginning of the study (mean follow up: nineteen months postoperatively). Mean BMI of SG patients was 50,1 kg/m² pre- and 31,8 kg/m² post-operatively and of TVGP patients, was 40,2 kg/m² before and 30,8 kg/m² after operation. The goal of the study was to detect whereas the reduction of excess body weight affects the above mentioned obesity-associated diseases and to compare those two methods. Our team measured how many patients taking medications for those diseases, were able to stop or reduce the prescribed medicines after the surgical intervention. In addition, a second scope of the study was to recognize how weight loss affected the patients' quality of life, using the Moorehead-Ardelt Quality of Life Questionnaire II scoring key.

Results: S. tables.

Conclusion: Both weight reduction procedures, proved to be effective in confining the studied disorders. SG was significantly superior to TVGP in the improvement of pulmonary disorders (p=0.036) and hypertension (p=0.048). Quality of life was improved after both procedures with SG having significantly better results (p=0.003).

Table 1.

	Sleeve 73 patients				
	pulmonary disorders*	diabetes	hypertension	musculo-skeletal pain	dyslipidemia
before operation	55	17	36	57	14
after operation	2	0	6	11	2
improved	53	17	30	46	12

% improvement	96,36%	100,00%	83,33%	80,70%	85,71%
TVGP 67 patients					
	pulmonary disorders*	diabetes	hypertension	musculo-skeletal pain	dyslipidemia
before operation	27	12	11	36	2
after operation	5	1	5	11	0
improved	22	11	6	25	2
% improvement	81,48%	91,67%	54,55%	69,44%	100,00%

Table 2.

quality of life post-operatively						
	Sleeve 73 patients			TVGP 67 patients		
	better	same	worse	better	same	worse
	68	2	3	48	9	10
% improvement	93,15%	2,74%	4,11%	71,64%	13,43%	14,93%

P.191 Conversion of Failed Laparoscopic Adjustable Gastric Banding: Sleeve Gastrectomy or Roux-En-Y Gastric Bypass?

PRESENTER: M. Jawad¹

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In the literature, late complications and treatment failures in laparoscopic adjustable gastric banding (LAGB) have been reported. When the patient presents with failure of LAGB, surgeons have the option to convert it to a different procedure. The aim of our study is to evaluate and compare the safety and efficacy of converting LAGB to laparoscopic sleeve gastrectomy (LSG) versus laparoscopic Roux-en-Y gastric bypass (LRYGB).

Between January 2008 and August 2012, a total of 39 patients underwent conversion of LAGB at our institution. Of these patients, 28 (71.8%) were converted to LRYGB, and 11 (28.2%) patients were converted to LSG. A retrospective review of a prospectively collected database was performed, noting the outcomes and complications of the procedure.

Mean body mass index (BMI) at the time of conversion was 40.6±5.5 kg/m² in LRYGB, and 38.7±6.3 kg/m² in LSG. Mean percentage of excess weight loss (EWL) was 48.1±22.7% in LRYGB, while it was 47.4±25.9% in LSG (p>0.93) at a mean follow up of 19 months. Four (14.3%) of LRYGB patients were readmitted due to abdominal pain, dehydration, and nausea/vomiting, and 2 (7.1%) patients required reoperation. Of 11 LSG patients, 1 (9.1%) patient was readmitted for new onset of severe reflux and underwent hiatal hernia repair. She was converted to LRYGB 32 months after the LSG procedure. Readmission rate (p>0.80) and reoperation rate (p>0.42) did not show statistical difference between the two procedures.

Both LSG and LRYGB seem to be effective in weight loss after failed LAGB.

P.192 Intractable Marginal Ulcer After Laparoscopic Gastric Bypass for Morbid Obesity: The Role of Laparoscopic Management

PRESENTER: W. Lee¹

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Background: Laparoscopic gastric bypass is a standard procedure to treat morbid obesity. Marginal ulcer may be the most common gastro-intestinal complication after gastric bypass and may become intractable in some patients. Our aim was to evaluate the incidence, presentation and outcome of intractable marginal ulcer.

Methods: The database of all patients in our bariatric center was retrospectively reviewed.

Results: From Dec 2000 to Dec 2012, 2130 patients underwent laparoscopic gastric bypass (680 RY bypass, 1430 mini-bypass) were included. Twelve (0.6%) patients developed intractable ulcers and required surgical intervention, including perforation in 7, Stenosis in 3 and intractable pain in 2. The incidence is similar between RY and mini-bypass. Laparoscopic surgery was performed in 8 patients and the other 4 patients received open surgery. Truncal vagotomy as an acid reducing procedure was performed in 6 patients. Smoking was the predictor of development of intractable ulcer.

Conclusions: Intractable ulcer requiring surgical intervention may develop in 1% of gastric bypass patients and can be managed by abstinence of tobacco usage with early laparoscopic management.

P.193 Outcome after Non-Operative Management of Acute Staple Line Leaks Following Laparoscopic Sleeve Gastrectomy

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Introduction: Staple line leak is the most dreaded complication after laparoscopic sleeve gastrectomy (LSG). However there is no standardized treatment protocol for the management of leak. The aim of this presentation is to share our experience with non-operative management of staple line leaks following LSG.

Methods: Retrospective review of prospectively collected data of 260 patients of LSG operated at our institution from January 2008 to February 2013 was carried out. The staple line leak was diagnosed with a combination of clinical features and demonstration of leak on imaging.

Results: Three patients, two of them being super-obese, had staple line dehiscence within 30 days following LSG. Leak was diagnosed on the 3rd day in 2 patients. All the patients were managed conservatively with image-guided percutaneous drainage of the intra-abdominal collections, naso-jejunal feeding and intravenous antibiotics. In two patients, the leak healed completely within four weeks without any further intervention. In one patient, a super-obese female, the leak got converted to a chronic low output fistula. She continued to drain about 50–100 ml. However, this patient succumbed to pulmonary embolism 3 months after surgery.

Conclusions: Non-operative management helped in successful closure of acute leak in two patients and failed in one patient. However, the initial sepsis could be controlled successfully in all the three patients with intravenous antibiotics and CT guided percutaneous drainage of infected collections. Non-operative treatment should be the initial approach for all patients with leak, who are hemodynamically stable and do not have generalized peritonitis.

P.194 Early Complications by Closing Mesenteric Defects at Laparoscopic Gastric Bypass. A Randomized Prospective Study

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Introduction: The incidence of internal hernia, bowel obstruction or strangulation in the mesenteric defects after LGBP has been reported to be 9–16%. Although it could be assumed that closure of the Petersen's space and the defect below the jejunojejunostomy can reduce rates of internal herniations, it is not known if this could be done without an increase in early complications.

Method: 2508 patients undergoing LGBP between May 2010 until October 2011 at 12 Swedish surgical departments were randomized to either closure of mesenteric defects with a running, non-absorbable suture (n=1259) or leaving them open (n=1249). The study was administrated by the Scandinavian Obesity Surgery Registry. Here we report 30-days results focusing on complications.

Results: Follow-up was 99.5 %. The groups were comparable regarding age, gender, weight and other risk factors. Operating time and hospital stay were longer in the closure group: 83 vs. 69 min (p<0.001) and 2.3 vs. 2.1 days (p=0.032). The number of patients with any complication during the first 30 postoperative days was 8.3 vs. 7.9 % (p=0.690), and with serious complications (Clavien-Dindo 3b) 4.2 vs. 2.8 % (p=0.051). Small bowel obstruction through kinking of the jejunojejunostomy was more common in the closure-group (1.28 vs 0.16 %; p<0.001).

Conclusion: Closure of the mesenteric defect during LGBP increases operating time and hospital stay but not the rates of overall or of serious complications after 30 days. However, there seems to be an increased risk of early bowel obstruction by kinking of the jejunojejunostomy. Long-term results are still waiting.

P.195 Redo Bariatric Surgery: from Band to LRYGBP in "Single Step"

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Introduction: The ideal operation to control morbid obesity has not yet been defined. From 10 to 30% of patients undergoing bariatric surgery will require a revision, either for unsatisfactory weight loss or for complications. Revisional weight loss surgery is more invasive than primary bariatric surgery and is associated with a higher morbidity. The purpose of this study is to establish the safety and efficacy of redo surgery, using a laparoscopic procedure in a "single step" approach. **Method:** from 2003 to 2012, 3361 patients underwent gastric band. As rescue procedure, for insufficient weight loss, we have carried out 89(2,64%) LRYGBP.

Technique: complete mobilization and clear visualization of angle of His, with the band still in place -construction of the pouch in a well blood supplied gastric tissue

Results: There was no mortality in the study. No conversion to open surgery, no leaks, no major complications except a case of UGIH treated conservatively. In 3 patients the RYGBP was performed in a two-step surgery for local anatomical impediment. The average BMI was 35.9 kg/m² (range 27 to 45.5) 12 months after surgery. Compared with a preoperative BMI of 46.7 kg/m², the weight loss was statistically significant. Average EWL was 68% at 24 months.

Conclusions: Patients who fail to achieve satisfactory weight loss after gastric restrictive operations are a difficult subset of patients to treat. Laparoscopic reoperative surgery is technically challenging and needs to be performed by surgeons well-trained in both bariatric and minimally invasive surgery. This study found that "the single step" laparoscopic approach to gastric band failure, although not free from complications and requiring a longer operative time, is safe and effective.

P.196 Gastric Pouch Necrosis Post Gastro-Yeyunal Bypass. The Importance of the Clinical Evaluation in the Decision Making Process

PRESENTER: M. Aceves¹

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Introduction: Gastric pouch necrosis post RYGBP is a rare complication. The key for the management of this complication is its detection based primarily in clinical suspicion and early treatment.

Methods: This is the case of a 38 year old woman with previous history of adjustable gastric band removal for band reservoir infection 5 years earlier who underwent LRYGBP and presents 48hrs later with tachycardia, tachypnea and hemoglobin loss. The team decides to surgically explore her, finding hemoperitoneum with a punctiform leak on the anterior aspect of the gastric reservoir. The hematic content gets drained, the bleeding site is sutured and a fibrin seal is put in, leaving a drain in place. The patient improves clinically over the next 48 hours to then present dark, foul liquid through the drain accompanied by halitosis like the drain liquid, tachycardia and tachypnea. The team decides to re-explore her, finding the same liquid without leak and a violet gastric reservoir. We decided to resect the reservoir performing a primary esophageal-yeyunal anastomosis, lavage and a yeyunostomy. A Wittmann patch was put in place for a schedule in advance re-exploration. The patient evolved satisfactorily. The new exploration revealed no leaks. A 5th day exploration did not show anything relevant and we proceed to perform a definitive closure. The patient was discharged 2 weeks later.

Pathology report: Gastric pouch necrosis secondary to massive venous thrombosis.

Conclusion: The clinical evaluation of the patient was the keystone that took the team to an early exploration allowing the resection and primary anastomosis without any major complication. This should always be the approach in these cases. The surgeon should not rely on laboratory or radiodiagnostics to decide whether or not to re-explore a patient.

P.197 Early Hemorrhage After Laparoscopic Gastric By Pass

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Introduction: Laparoscopic gastric bypass remains one of the main therapeutic options for morbid obesity. Among the potential complications, early hemorrhage is relatively uncommon with an incidence ranging from 0.6% to 4.4%. The inaccessibility of the gastric remnant and the risks associated with the early postoperative endoscopy, make the diagnosis and treatment of early hemorrhage after RYGBP a challenging task. The objective of the study is to focus on clinical presentation of postoperative bleeding, review the incidence, the management, the options for treatment and emphasize the methods for prevention.

Method: Over a 6 years period, the medical records of patients who had hemorrhage after LRYGBP were reviewed for clinical resensation, diagnostic evaluation and management.

Results: Of 1169 patients who underwent RYGBP, 14 (1,19%) developed postoperative hemorrhage. 11 with melena, 1 with ematemesis, 2 intraperitoneal. Comparing bleeders to non bleeders, the average BMI, gender distribution, gastro-jejunal anastomotic technique, were not significantly different. 4 patients required surgery to control hemorrhage (gastric remnant, J-J anastomosis, gastric vessel). 9 patients were treated conservatively, with blood

transfusion in 3 patients. The administration of ketorolac was related with an early acute anastomotic ulcer and hematemesis: endoscopic therapy was ultimately successful in controlling the hemorrhage, but requiring a second EGD for rebleeding.

Conclusions: Hemorrhage is a potential concern in the postoperative management of patients undergoing laparoscopic RYGBP. The surgeon performing laparoscopic gastric bypass should understand the need for early recognition and management of this complication, as it can be life-threatening. Endoscopic management of bleeding from the gastric pouch, may be successful. Reoperative intervention is indicated in patients presenting with hemodynamic instability, decreasing hematocrit despite blood transfusion. Preventive measures include the use of staples with shorter staple height, the staple-line reinforcement products, the staple-lines oversewing and fibrin sealant on sutures.

P.198 Value of Routine Contrast Radiology Following Bariatric Surgery!!

PRESENTER: E. Butterfield¹

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Introduction: The practice of routine contrast radiology varies between bariatric centres. The aim of this study was to quantify the sensitivity and specificity of routine post-operative contrast radiology in detecting leaks following laparoscopic sleeve gastrectomy or bypass.

Method: A retrospective study of bariatric cases which had a post-operative contrast swallow in our tertiary designated bariatric centre between January 2012 to February 2013. Results were analyzed with respect to a) whether their routine post-operative radiology showed a leak and b) whether they ever presented with a leak.

Results: In a total of 166 patients, there were no clinically significant leaks detected by routine contrast radiology. Three patients' images showed a "radiological" leak; follow-up on these patients prior to discharge subsequently ruled out any leak. Three patients were readmitted with leaks; all of these patients had normal swallows on discharge. The sensitivity and specificity of routine contrast radiology in detecting a leak were 0% and 98.1% respectively. Furthermore, the positive predictive value of a "radiological leak" was 0, and the negative predictive value (NPV) of normal radiology was 0.981. Yates' corrected chi-squared statistic was 0 ($p > 0.99$ that any correlation between radiological "leaks" and clinically significant leaks is due to chance).

Conclusion: Routine post-operative contrast radiology has minimal value in detecting clinically significant leaks. Normal images on routine post-operative contrast radiology are not correlated with a lower risk of future leaks. In patients in whom there is a clinical suspicion of a leak in the post-operative period, immediate laparoscopy must be performed.

P.199 No Benefit from Routine Upper Gastrointestinal Imaging After Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass

PRESENTER: D. Gaertner¹

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Introduction: Stapleline or anastomotic leaks are serious complications during the early clinical course after bariatric operations. Radiological examination with oral intake of a contrast agent is a possibility to detect leakages in the upper gastrointestinal tract. The aim of this study was to evaluate early routine upper gastrointestinal imaging (UGI) after primary bariatric procedures in a single center.

Method: All data was collected prospectively and analyzed retrospectively. From 01/2009 to 12/2012, 198 sleeve gastrectomies (SG) and 83 Roux-en-Y gastric bypasses (RYGB) as primary laparoscopic bariatric procedures were performed. Other primary procedures and revisional surgery were not

included. Routine UGI was performed between the first and the third day after surgery independently from clinical aspects. The evaluation captured leakages. **Results:** In 198 SG, 8 leakages occurred (4%, all proximal staple line). All patients showed clinical symptoms; in one case the leakage was verified by UGI. No leakage was documented in normal clinical course. One leakage of the gastrojejunostomy (1,2%) and one of the jejunojejunostomy (1,2%) occurred in 83 laparoscopic RYGB. In both cases the initial UGI was normal. **Conclusion:** In our study there was no benefit from routine UGI after bariatric procedures with a normal clinical course, so UGI can't be recommended. At the time UGI leakages were either not proved or occurred only later in the clinical course. Due to later occurrence stenoses also couldn't be detected by UGI. In the management of leakages we favor computertomography or early relaparoscopy.

P.200 Primary Nonclosure of Mesenteric Defects During Laparoscopic Roux en Y Gastric Bypass – Reoperations and Intraoperative Findings in 116 Patients

PRESENTER: T. Delko¹

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Background: One of the major life threatening complications after Roux-en-Y gastric bypass (RYGB) are internal hernias, which have been reported with an incidence of 3%-6% in the literature. If not diagnosed early, internal hernias can lead to major morbidity and mortality via bowel incarceration and consecutive necrosis. Therefore strong advice to close mesenteric defects during RYGB has been proposed. The aim of our study is to analyze intraoperative findings in a cohort of 116 patients which had reoperations after primary nonclosure of mesenteric defects during their RYGB.

Methods: We searched for reoperations in patients with nonclosure of mesenteric defects during the RYGB procedure in our prospectively collected database. Intraoperative findings were collected from the operative notes dictated by the attending surgeon. All operative notes with examined mesenteric defects were included.

Results: We identified 116 patients (17 male, 99 female) with a mean age of 44.9 (SD 10.6). 94 patients had reoperations because of pain (34 emergent, 60 elective) and 22 patients had reoperations for other reasons (weight regain, prophylactic inspection of mesenteric defects). Median time from RYGB to the reoperation was 36 months (range 3–144), mean EWL before the reoperation was 61% (SD 20.6). The incidence of internal hernias was 11.2%, with internal hernias at Petersen's space in 5 and internal hernias at the mesojejunal space in 8 patients respectively. Petersen's space was found closed spontaneously in 4 and mesojejunal space in 19 cases. Mortality of nonclosure was 1 because of bowel ischemia with consecutive necrosis. 111 reoperations were performed laparoscopically and 5 led to conversion to open surgery. Early surgical complications because of the reoperations occurred in 5 patients (1 wound infection, 1 cystic stump leak, 3 bowel obstructions).

Conclusion: Nonclosure of mesenteric defects can lead to constant or intermittent pain due to internal hernia with consecutive bowel necrosis and death after RYGB. Spontaneous closure rate of Petersen's or mesojejunal defects is low. Diagnostic laparoscopy is mandatory in patients with primary nonclosure of mesenteric defects and clinical presentation of pain to rule out potential life threatening bowel necrosis. Secondary closure of mesenteric defects can be performed laparoscopically with low morbidity.

P.201 Revisional versus Primary Roux-en-Y Gastric Bypass: A Case Matched Analysis

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Background: Gastric banding has been a widely used bariatric procedure. Band problems led to revisional bariatric procedures. Data comparing revisional gastric bypass vs. primary gastric bypass is scarce.

Methods: Retrospective Analysis of 48 revisional VVLL RYGB that were matched one to one with 48 primary VVLL RYGB was done. Outcome measures were operating time, conversion to open surgery, weight loss, surgical early and late morbidity.

Results: Surgical and medical morbidity was not significantly different. Revisional VVLL RYGB led to significantly greater excess weight loss (EWL) after 12 (27.1% vs. 54.3%, $p < 0.001$) and 24 months (27.1% vs. 57.2%, $p < 0.001$). After 12 months of follow-up the revisional group showed an excess weight loss of 41.8% (SD 17.9) and after 24 months 45.1% (SD 21.4) when calculated on the basis of the pre-revisional weight. Calculating the total excessive weight loss based on the weight before the LAGB it was 54.3% after 12 months and 57.2% after 24 months, respectively. Excess weight loss in the primary RYGB group was significantly higher for both types of calculation 41.8%/54.3% vs. 64.1% ($p < 0.001$, $p < 0.01$) after 12 months and 45.1%/57.2% vs. 70.4% ($p < 0.001$, $p < 0.002$) after 24 months.

Conclusions: Revisional VVLL RYGB is safe and can be performed laparoscopically as a one stage procedure but shows less effective excess weight loss than primary gastric bypass procedures.

P.202 Predicting Complications and Preoperative Risk Assessment in Bariatric Surgery Patients

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Introduction: Obesity is associated with several comorbidities. Obese patients that undergo surgery are at higher risk for developing complications, such as respiratory complications. The aim of this study was to investigate the complication rate after bariatric surgery and to assess potential predictive factors.

Material and Methods: Between 2007 and 2011 a total number of 1069 patients (male N=219, female N=850) underwent laparoscopic bariatric surgery (sleeve gastrectomy 68,9%, gastric bypass 25,1%, gastric bypass and removing of gastric band 6,0%). Outcome data have been stored in a prospectively maintained database; univariate analyses and logistic regression were performed to identify predictive factors of complications.

Results: Median hospital stay was 4 days (2–70 days). Overall complication rate was 7.5%, seven patients died due to complications (mortality rate <1%). There were no differences in demographics between patients in whom complications did or did not occur. Surgical technique did not influence postoperative morbidity. Patients with complications sustained a longer operation time (82 minutes versus 61 minutes, $p=0.02$). Patients with complications had significantly worse lung function tests preoperatively (median FEV1 86% and median FVC 94% of predicted values) compared to patients without complications (FEV1 91% and FVC 98%, $p < 0.01$ and $p=0.02$). Logistic regression analysis revealed a medical history of hypertension (OR 1.85) and a FEV1 <85% of predicted (OR 2.57) as independent predictive factors.

Discussion: Overall morbidity and mortality rates are low after bariatric surgery. Preoperative lung function may predict postoperative complications. Further research will be necessary to investigate the usefulness of preoperative conditioning to improve pulmonary function.

P.203 Revision Surgery for Bariatric Patients in a Single Centre Institution

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Introduction: Because obesity is a chronic disease, any proposed obesity treatment should be expected to demonstrate long-term durability to be considered effective. Nevertheless a considerable number of patients need revision surgery, mainly due to inadequate weight loss. The aim of this study was to investigate the revision rate after bariatric surgery and to assess potential predictive factors.

Material and Methods: Between 2007 and 2012 a total number of 1069 patients underwent laparoscopic bariatric surgery (sleeve gastrectomy N=729, gastric bypass N=340). Outcome data have been stored in a prospectively maintained database and were analysed to identify potential predictive factors for failure of primary bariatric surgery.

Results: A total number of 82 patients (8%) underwent a surgical revision after primary bariatric surgery. 55 of these patients received revisional surgery due to inadequate weight loss and 27 due to GERD or gastro-esophageal immobility. Median BMI before primary surgery was 46 kg/m² and was comparable to patients not receiving revision. Complication rate (29% vs. 8% overall) and mortality (6% vs. <1% overall) was relatively higher following revisional surgery

Conclusion: A higher rate of morbidity and mortality rate was found in patients receiving a revision due to failure of the primary bariatric procedure. Following these findings the question was raised if special care and work-up could be helpful in reducing the complication and mortality rate in this selected patient group.

P.204 Blood Pressure and Risk of Post Bariatric Surgery Bleeding

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Introduction: Post-operative bleeding is a serious early complication after bariatric surgery. Some surgeons advocate pharmacological elevation of intra-operative blood pressure to identify potential bleeding sites. This study was conducted to assess the usefulness of such a strategy.

Methods: Patients who had serious post-operative bleeding (POB) following LRYGB and LSG were identified from a prospectively maintained database. POB was defined as bleeding requiring transfusion, confirmed on CT or at re-operation. These patients were compared for pre-operative, intra-operative and immediate post-operative (recovery) blood pressures with a control cohort.

Results: Since 2011 we have performed 652 LRYGB and 265 LSG. We have had nine patients with POB, five after primary LSG and four after primary LRYGB. Thirty-five patients were randomly selected to serve as control with no significant difference in gender, age, BMI or ASA. There was no difference in pre-operative and recovery systolic blood pressures between the two groups. However, significantly higher intra-operative systolic blood pressures were recorded in cases with POB. Blood pressure in recovery was significantly higher in all cases than pre- and intra-operatively. In cases with POB seven required surgical control, all required transfusion.

		<i>Mean Systolic BP</i>	<i>95%CI</i>	<i>p-value</i>
Pre-OP	<i>Control</i>	134.3	128.3-140.4	0.31
	<i>POB</i>	141.1	126.3-155.9	
Intra-OP	<i>Control</i>	132.3	125.5-139.0	0.02
	<i>POB</i>	148.6	137.0-160.2	
Recovery	<i>Control</i>	157.4	150.3-164.5	0.32
	<i>POB</i>	165.0	148.8-181.2	

Conclusion: There was no difference in post-operative blood pressure between the two groups and the POB group had higher intra-operative blood pressures despite

no pharmacological intervention. Elevation of intra-operative blood pressure is unlikely to be helpful in preventing POB.

P.205 Transfusion Requirement Post Bariatric Surgery

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Introduction: The reported incidence of post-operative bleeding following bariatric surgery ranges from 0.5% to 4%. Published local audit data found rates of 2.1% after RYGB and 0% after LAGB. There has been some debate as to the necessity of routine group and save sampling. We re-audited rates of transfusion and looked at their timing.

Methods: All post-operative morbidity has been prospectively collected in a locally held database since 2011. All cases requiring transfusion for post-operative bleeding were identified. Transfusion requirements were noted as well as time to first unit transfused.

Results: Since 2011 we have performed 652 LRYGB and 265 LSG and 72 LAGB in our unit. Ten patients had postoperative bleeding requiring transfusion. Five cases had undergone primary LSG, four LRYGB and one revisional surgery. Incidence of transfusion was 1.01% overall, 0.61% after LRYGB and 1.89% after LSG. Median units transfused was 3.5 (range 2–11). The median time from going into recovery until first unit transfused was 27 hours and 42 minutes (range 10hr44 to 73hr15). No one required intra-operative transfusion. The cost of running a group and save in our hospital is £5.06 per sample giving a total cost of £4,640 since 2011. Our rate of post RYGB bleeding has reduced from 2.19% to 0.61%.

Conclusion: Routine group and save samples for all bariatric patients comes at a significant cost. Given the absence of immediate need for blood products, routine group and save sampling may be unnecessary.

P.206 LAGB: A Historic Procedure and a Future Headache?

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Introduction: Our unit has over a decade's experience in the use of LAGB. Local audit data identified high rates of LAGB removal and need for secondary procedures. This study examines the fate of our LAGBs and compares outcomes for patients undergoing revisional surgery.

Methods: A prospectively maintained database was used to identify all cases of LAGB. Logistic regression modelling and Kaplan Meier curves were calculated for band survival. A subset of cases undergoing revisional LAGB to LRYGB, with a minimum of two year follow up, was compared to all primary LRYGB performed in the same time period.

Results: We have placed 674 bands between 2000 and 2012. Of these 142(21.22%) have been removed. Higher rates of removal were seen in patients aged <40 years (26.7%), and those with a BMI >60 Kg/M² (28.6%). Earlier band removal was seen in younger patients (p<0.05). Rates of removal increased in a linear fashion by year of placement. Of bands placed four or more years ago 35% required removal. Eighty three patients (58.45%) went on to have a further bariatric procedure; band to bypass n=66; band to sleeve n=17. No difference in weight loss, morbidity/mortality or length of stay was seen between the cohorts of LAGB to LRYGB (n=55) and primary LRYGB (n=667).

Conclusion: In a significant proportion of patients there appears to be a finite 'band life'. Provision for removal and consideration of secondary procedure must begin now in units with appropriate experience. Revisional LRYGB has good outcomes and should be considered the revisional operation of choice.

P.207 The Need for Consensus, Consistency and Core Outcome Sets in Bariatric Surgery

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Aims: Bariatric surgery requires evaluation with consistent outcome reporting to improve study comparisons, data synthesis and clinical decision-making. We examine adverse event reporting after bariatric surgery to inform the development of a core outcome set (COS).

Methods: A systematic review and an evaluation of the National Bariatric Surgery Register (NBSR) identified verbatim outcomes and definitions. Verbatim outcomes were classified into outcome domains (broad aspects of health measured to assess an intervention) by independent reviewers and outcome definitions considered by study design.

Results: 66 studies (18 randomised, 48 non-randomised) identified 1073 verbatim outcomes; a further 21 were in the NBSR. 912 outcomes were reported only once. Outcomes were categorized into 9 domains: surgical complications (n=357), obesity-related disease (n=267), anthropometry (n=117), haematological/biochemical markers (n=80), treatment-pathway outcomes (n=75), observer assessed (n=65), peri-operative technical outcomes (n=45) and mortality (n=30). Of the 357 surgical complications reported the commonest were late complications, re-operation and band slippage reported in 17 (26%), 11 (17%) and 6 (9%) of studies respectively. Definitions were reported for fewer than 50% of outcomes, were varied and contradictory. For example, 'late complications' was defined 9 times (reported 17 times), only 3 were adequate. Outcomes were more frequently defined in randomised versus non-randomised studies (34% vs 24%, p=0.0001).

Conclusions: Outcome reporting for bariatric surgery focuses on adverse events. Outcomes are inconsistent, ill-defined and lack consensus limiting the value of published data. Future work will survey key-stakeholders to prioritise adverse events and outcomes and agree a COS to report as a minimum in all studies.

P.208 Long Term Outcomes of Redo Surgery After Laparoscopic Adjustable Gastric Banding

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is first line surgical procedure for management of morbid obesity. Band removal is undertaken for failed band or band complications. When this procedure is performed redo surgery can be preferred after band removal. In this study we tried to analyze long term outcomes of redo surgery after LAGB.

Materials and Methods: The study was carried out at Ankara Numune Teaching Hospital. Patients (n=33) who had band removal surgery between July 2008 and February 2013 were enrolled in the study. Pre-banding body mass index (BMI) and weight, BMI and weight at the time of band removal, BMI and weight before redo surgery, final weight and BMI at the latest follow up visit were evaluated.

Results: There were 26 female and 7 male patients. The average age was 40 (min 23, max 60). Reasons for band removal are analyzed. Six of these patients had redo surgery simultaneously with band removal while 27 had redo surgery at a mean follow up interval of 24 months (min 2, max 31). BMI and weight measurements of patients will be presented. Majority of patients had laparoscopic sleeve gastrectomy (LSG) as redo surgery. Roux-Y gastric bypass (RNY) was second choice. Two patients failed to lose weight and 1 patient gained weight at the end of follow up. Mean weight loss was 21 kg for remaining patients. The mean BMI of these patients was 34kg/m².

Conclusion: Redo surgery can provide safe and sustainable weight loss for patient who previously had LAGB.

P.209 Endoprosthesis for the Treatment of Leak and Stenose of Sleeve Gastrectomy and Gastric By-pass

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Introduction: In 2013, the use of stents has become an alternative to the surgery for the management of the anastomosis leaks in bariatric surgery. We have retrospectively analysed patients treated by endoprosthesis for anastomotic leak.

Patients et Méthodes: From 2010, in some particular clinical cases of fistulas after Sleeve SG and GBP, or stenosis, we have performed the intraluminal stents placement. Thirteen patients have been treated by endoscopic stents, 11 for anastomosis leak and 2 for stenosis. There were 13 women. The IMC was of 45 Kg/m in average. There was a comorbidity in 7 patients (54 %), a diabetes for 5 patients (38 %). Cinq patients (38%) have been re-operated, 4 before and 1 after the prosthesis placement.

Résultats: There was no mortality in the serie. The success rate, with fistula healing or satisfactory calibration of the stenosis was the 100 % (13/13). The complication rate was the 54 %. The re-intervention rate was the 15 % (2/15) for intestinal migration. The main complication was the intestinal migration and it concerned 7 patients (54 %).

Conclusion: The use of stents in the management of staple line leak after SG or GBP is an effective alternative to the surgery. The treatment with stents is really effective, and it allows to avoid surgical re-operations. Its use is controversial. Some prospective randomized studies have to evaluate to validate the indication of endoprosthesis placement for complications in bariatric surgery.

P.210 Management of Symptomatic Stenosis After Laparoscopic Sleeve Gastrectomy

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Introduction: This study aimed to determine the incidence, and management options for symptomatic stenosis (SS) after laparoscopic sleeve gastrectomy (LSG).

Method: A prospective study reviewed morbidly obese patients who underwent LSG between October 2007 and December 2012 to identify patients treated for SS.

Results: In this study, 130 patients with a mean age of 42.5 years and a mean body mass index (BMI) of 46 kg/m(2) underwent LSG. The LSG procedure was performed using a 36-Fr. bougie and tissue-reinforced staplers. Two patients underwent contrast study which demonstrated a fixed narrowing. Endoscopy confirmed short-segment stenoses: one located at mid-body and

one located near the antrum. Contrast studies demonstrated minimal passage of contrast through segment stenosis. Both patients underwent multiple endoscopic dilation procedures and endoluminal stenting, ultimately requiring laparoscopic conversion to Roux-en-Y gastric bypass. The mean time from the initial surgery to the surgical revision was 30 days.

Conclusion: Symptomatic short-segment stenoses after LSG may be treated first with endoscopic balloon dilation. Persistent-segment stenoses that do not respond to endoscopic techniques may ultimately require conversion to Roux-en-Y gastric bypass.

P.211 Meralgia Paresthetica after Bariatric Surgery in Iranian Patients

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Background: Meralgia paresthetica (MP) is a benign clinical syndrome of entrapment of the lateral cutaneous nerve in the thigh. Among the complications of bariatric surgery, neurologic complications are not uncommon and of these complications, MP is a frequent clinical diagnosis. Thus, knowing the clinical risk factors of MP is of great importance as they help with the differential diagnoses of MP from other serious disorders.

Objectives: To study the prevalence of MP and its clinical risk factors after bariatric surgery in a sample of Iranian morbid obese patients undergoing surgery for obesity.

Patients and Methods: In a cross-sectional study, 163 patients (146 females and 17 males), who underwent bariatric surgery, were called one to 48 months after their surgery. After obtaining their consent, the patients were interviewed and completed a questionnaire containing history and presentation of neuropathy for this study. In addition, some of the variables of the questionnaire were filled using the patient's medical records.

Results: One month after surgery, 32 patients (19.5%) had neurologic signs or symptoms of MP located in their lateral thigh. Diagnosis of MP was made in 21 (17 women and four men) patients (12.8% of all patients), sub-acute polyneuropathy in seven patients (4.3%), and acute polyneuropathy in the remaining four patients (2.4%). No specific treatment was given to the patients with MP. Symptoms of MP were resolved within six months in 15 patients (71.4%). In a univariate analysis of MP, only a history of a neuropathy was significantly correlated with the occurrence of MP after surgery ($P = 0.004$) with an odds ratio of 4.2 (95% confidence interval: 1.4–12.2).

Conclusions: MP is not a common complication after bariatric laparoscopic surgery, however, a history of neuropathy and diabetes should be mentioned to surgeons as risk factors for MP. Additionally, using a belt for fixation could be an etiologic factor for MP after bariatric surgery.

P.212 A Comparison Between Two Different Prophylactic Doses of Unfractionated Heparin for Deep Venous Thrombosis Prevention in Laparoscopic Bariatric Surgery

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Background: Deep Venous Thrombosis (DVT) is a major risk of morbidity and mortality in morbid obese patients underwent bariatric surgery. There are some controversies in different kind of prophylactic strategies for DVT in laparoscopic bariatric surgeries. Unfractionated heparin (UFH) is an available and reversible anticoagulant used for DVT prophylaxis.

Objectives: This study aimed to compare clinical results of two different dosage regimes of unfractionated heparin for short term prophylaxis of DVT after bariatric surgery.

Patients and Methods: 139 patients with morbid obesity who underwent laparoscopic bariatric surgery (laparoscopic Roux-en-Y gastric bypass, sleeve gastrectomy, and laparoscopic gastric banding) were evaluated in two groups: group A received 5000 IU unfractionated heparin q12h and group B received the same dose but q8h (preliminary dose received before induction of anesthesia followed by 2 or 3 times daily). All patients were evaluated by physical examination and Doppler ultra sound for DVT before and 10 days after surgery.

Results: There was no statistically significant difference between two groups in venous thrombosis. No thrombotic events were observed before and after operations. There were no heparin induced thrombocytopenia and no meaningful difference between two groups in postoperative bleeding.

Conclusions: This study showed that in combination with non-pharmacologic methods for prevention of thromboembolic events, both regimes of UFH prophylaxis had similar clinical effects.

P.213 The Radiological Findings of an Internal Hernia After Laparoscopic Roux-en-Y Gastric Bypass

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Introduction: Even though internal hernia after laparoscopic Roux-en-Y gastric bypass (LRYGB) is a well known entity for bariatric surgeons and radiologists, accurate diagnosis remains difficult. Most surgeons advocate a low threshold for CT scan and when in doubt laparoscopy/-tomy. The aim of this study was to compare the radiological diagnosis and the operative findings in patients undergoing explorative laparoscopy for abdominal pain after antecolic LRYGB.

Methods: A retrospective analysis of all LRYGB patients who underwent an explorative laparoscopy between January 2007 and August 2012 has been performed. Radiological and operative reports were compared.

Results: One hundred and nineteen patients underwent an explorative laparoscopy for abdominal pain after antecolic LRYGB, 105 of which had a preoperative CT-scan. Seventy four patients suffered from an internal hernia (45 at the Petersons space, 20 at the jejuno-jejunostomy, 9 at both sites), 21 suffered from adhesions, 15 had stigmata of chronic friction of the mesodefects and 9 had a negative exploration. Eight patients (6.7%) required a conversion and no bowel resections had to be performed. Twenty three (39.6%) patients had a false negative and 10 (21.3%) patients a false positive CT-scan. For detection of an internal hernia computed tomography had an overall sensitivity of 61.7% and specificity of 77.8% in our population.

Conclusion: Internal hernia after antecolic LRYGB remains a difficult diagnosis. A CT-scan can help confirming the diagnosis, but a high index of clinical suspicion with a low threshold for explorative laparoscopy/-tomy remains the cornerstone of good treatment.

P.214 Normoproteic Treatment to prepare Bariatric Surgical Patients

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Introduction: We evaluated the use of normoproteic amino acid treatment (NPAT) in obese patients with 1) high operative risk, 2) failure of previous bariatric procedures, 3) contraindications or refusal of surgical treatment in order to recover a condition fit for surgery.

Method: 10 patients (5 females, mean age 48.6 years, mean BMI 43.8±3.0 kg/m²) were enrolled. Three presented weight regain after bariatric surgery (2 sleeve gastrectomies, 1 gastric banding) and were candidate for revisional surgery. In 5 cases the duration of the diet was 21 days (50% low fat protein foods and 50% aminoacid supplement). In 5 other diet lasted 10 days (exclusive amino acid dietary supplement). Abdominal ultrasound was performed for the evaluation of liver, spleen, perivisceral fat and abdominal wall thickness, before and after 2–4 days from the end of NPAT.

Results: One patient suspended the diet after two days for psychological intolerance. Weight loss was 8–10% of initial body weight (final BMI 40.7±3.4 Kg/m²). Degree of steatosis improved after NPAT ($p < 0.001$) and longitudinal diameter of the liver (17.9±1.9 cm Vs 16.5±1.8 cm; $p = 0.001$) and portal vein diameter (12.7±1.4 mm Vs 11.5±1.4 mm; $p < 0.001$) decreased. Reduction of abdominal wall thickness (1.1±1.2 cm) and perivisceral fat (2.0±0.8 cm Vs 1.4±0.5 cm) was also observed, without affecting muscle thickness.

Conclusions: Our study proves the effectiveness of NPAT in fast weight loss, reducing liver dimensions, degree of steatosis and abdominal wall thickness. NPAT could be proposed as the pre-surgical preparation of choice in patients before bariatric surgery.

P.215 Gastrogastric Fistula: A Significant Problem for the Future?

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Introduction: Gastro-gastric fistulas (GGF) are an uncommon but recognised cause of late post operative complications following gastric bypass surgery. The aim was to assess GGFs in one of the largest units in the UK.

Methods: Patients with a GGF were identified from the prospectively collected bariatric database in a large NHS hospital. A retrospective case note review was performed

Results: There was a total of 7 GGFs in 6 patients. The mean age was 45 years (range 39–51) at primary surgery, mean BMI 54(45–67) and 4 out of 6 were female. The mean time to symptoms was 20 months range (range 15–27 months). Symptoms were pain 5, vomiting 4, new reflux 2, excessive weight loss 2. Weight loss at time of diagnosis was 77% of excess (42–114%). Gastric anastomotic ulceration was an established feature in 3. Smoking was a factor in 3, 1 had a previous gastric band, 2 required lengthy surgery and 2 used non absorbable sutures. 5 were diagnosed on contrast swallow and one at surgery. The 1st patient had the fistula surgically divided but recurred 20 months later. All subsequent operations involved resection with redo gastrojejunal anastomosis. Allowing for this time lag a total of 402 persons had surgery with a 1.5% incidence.

Conclusions: Gastro-gastric fistulas aetiology is multifactorial and in contrast to VBG staple line failure weight loss appears a feature. The number of GGF is increasing as number of operations is increasing and resection appears to be an effective treatment but further comparative studies are required.

P.216 Late Gastro-Gastric Fistula After Roux-En-Y Gastric Bypass as a Complication of Chronic Marginal Ulceration: Experience of a High-Volume Bariatric Centre

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Introduction: Marginal ulceration (MU) is a well-known complication after Roux-en-Y gastric bypass procedure (RYGB). Treatment consists of proton-pump inhibitors combined with avoiding known risk-factors such as smoking and non-steroid anti-inflammatory drugs (NSAID). Rarely, MU can evolve in a gastro-gastric fistula (GGF) whose treatment is much more challenging.

Method: Data of all surgical procedures performed for GGF after divided RYGB between January 2005 and December 2012 were reviewed. Patient characteristics, risk factors and surgical details were evaluated.

Results: Nineteen patients underwent surgery for GGF after RYGB. Mean time between the initial and the revisional surgery was 33 months. Almost 75% of the patients (14/19) had a documented history of chronic MU. More than half of patients with GGF (52.6%) had not quit smoking; about one third (31.6%) used prolonged NSAID. Intra-operatively, the fistula was located near the anastomosis at the posterior side of the pouch in 94.7% patients (18/19). In all cases the gastroenterostomy was resected and a whole new anastomosis was constructed. Partial gastrectomy of the remnant stomach was performed in 42.1% (8/19) because of friable stomach-tissue near the fistula site. All but one were managed laparoscopically.

Conclusion: In most cases, GGF are a direct consequence of refractory MU, that perforates and protrudes the posterior gastro-enterostomy site and thereby creating a fistula to the excluded stomach. In case of occurrence of a connection between pouch and gastric remnant, the problem will only worsen by increased exposure to gastric acids. Therefore, in case of GGF near the anastomosis, we advocate prompt surgical intervention.

P.217 Unbuckling of Gastric Band: A Case Series

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Background: Laparoscopic Adjustable Gastric Banding (LAGB) is considered as an effective bariatric procedure with very minimal early post operative complications. Long term complications like band slippage, erosion and port rotation and infection are not uncommon. However the phenomenon of unbuckling of gastric band with or without buckle fracture is a rare complication.

Methods: Prospectively collected data of patients who underwent LAGB using a standardised pars flaccida technique utilizing the A.M.I. soft band (Agency for Medical Innovations, Austria) between January 2004 and September 2011 was analysed retrospectively in terms of patient demographics, timing of unbuckling since insertion, patients symptom profile and intra-operative findings.

Results: Total number of patient analysed were 628. 14 patients (2.2%) with a median age of 39.5 years (range 32–62) and BMI of 43.5 (range 38.9–52) experienced spontaneous unbuckling of band. 5 patients experienced bolus obstruction or retching followed by complete loss of restriction and the remaining patients experienced no preceding symptoms. Unbuckling was diagnosed radiologically with contrast swallow. Unbuckling occurred at a median of 19 months post insertion (range 6–50). The median band fluid volume at the time of unbuckling was 7mls. Intra-operatively associated buckle fracture was found in 3 out of 11 cases operated so far and the remaining were awaiting surgery.

Conclusion: Spontaneous unbuckling of A.M.I. soft gastric band is not an uncommon complication following LAGB. Probable aetiology might be failure of the buckle mechanism with or without buckle fracture. Patients usually present with complete loss of restriction and may have preceding symptoms.

P.218 Management of Surgical Complications Following Sleeve Gastrectomy or Gastric Bypass Surgery

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Introduction: Postoperative complications following bariatric surgery occur frequently but the ideal management of these complications is still under discussion. We present here our pathway of management of postoperative complications following sleeve or gastric bypass surgery.

Materials and methods: Between 7/2009 and 12/2012 321 patients (average BMI 46.2 kg/m²) underwent 220 sleeve resections (SR) and 101 gastric bypasses (GB). There occurred 12 postoperative leaks in the SR group and 3 insufficiencies in the GB group. One patient of the bypass group with intrasplenic abscess received an open splenectomy. Of the SR group 9 patients were treated successfully with endoluminal stenting by our gastroenterologist. 2 patients with a small fistula at the angle of His were treated with Ovesco Clips and one patient needed finally a gastrectomy with long term ICU stay. In the bypass group 2 patients were reoperated laparoscopically and the gastrojejunostomy was redone. One patient in this group was treated with a stent successfully.

Results: SR: 6 patients had an uneventful course after stent explantation. (median stent therapy 12 d). 3 patients required repeated pneumatic dilatation of the sleeve following stent explantation due to scar stenosis. 1 patient with the Ovesco clip had a complete occlusion of the sleeve 5 days post clip implantation resulting in a laparoscopic reoperation with gastrotomy and clip explantation and suture of the defect, the other patient was uneventful. GB group: all patients had a normal postoperative course.

Conclusion: Stent implantation in postoperative leaks after bariatric surgery is an effective and safe treatment. Reoperation should be only considered in patients when stent implantation may be technically difficult and depending on the size of the leak.

P.219 CT-Guided Percutaneous Drainage of Abdominal Collections After Bariatric Surgery

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Introduction: Management of abdominal collections secondary to bariatric interventions is complex and computed tomography-guided percutaneous drainage (CTPD) of them is a less invasive method to consider. We present our experience with this technique.

Method: Case series. All patients treated at our institution between July 2008 and March 2012 who developed collections due to bariatric surgery procedures and required CTPD as part of their treatment. Descriptive statistics of demographics and clinical outcomes.

Results: 23 patients (14 female). Mean preoperative age 39 (±9) years, mean initial BMI 36.5 (±5.2) kg/m². 19 patients from our institution and 4 from other centers. Initial surgery: 18 submitted to sleeve Gastrectomy, 4 to gastric bypass and 1 to gastric band, all laparoscopically. In 11 (47.8%) patients an associated leak was demonstrated. Mean time from surgery till drainage placement 12 (±8) days. A total of 28 percutaneous drainages were placed. 14 (60.9%) cases were successfully treated with CTPD as only procedure. In 6 patients an additional endoscopic procedure was required and the remaining 4 patients required reoperation. Mean time of drainage removal was 36 (±31) days. There were no complications nor mortality due to percutaneous procedure in this series.

Conclusion: In our experience, CTPD of abdominal collections due to bariatric procedures must be considered in selected patients because of its favorable results and low associated morbimortality. To generate evidence-based recommendations larger studies are needed.

P.220 Treatment Options for Failed Roux-En-Y Gastric Bypass

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Introduction: Bariatric surgery is the most effective therapeutic option in morbid obesity. Roux-en-Y Gastric Bypass (RYGB) is the most popular procedure according to Buchwald's world wide data review. While the success rate is described to be 60 to 70% in the long term, some of the patients fail to lose sufficient weight (Excess Weight Loss of less than 50% according to Reinhold's criteria) or experience weight regain. There is still controversy regarding the treatment of this group of patients.

Methods: A Pubmed literature research for failure following RYGB was performed in order to give an overview of the therapeutic options. In addition our own results in the treatment of weight regain or insufficient weight loss will be presented.

Results: Non surgical therapy is considered best to start treatment for weight loss failure. Endoscopic procedures can be used in case of anastomotic or pouch dilatation. Laparoscopic placement of a band be it adjustable or fix is a surgical option as well as adding malabsorption to the mainly restrictive procedure thus leading to further success in terms of weight loss.

Conclusion: As treatment of obesity works best by using a team approach we think that the first line treatment for failed RYGB should be non surgical. If all conservative attempts to adapt eating behavior fail surgery remains an option. Still it remains a controversial issue whether the placement of a band or the conversion to a more malabsorptive procedure is the key to success.

P.221 Incidence and Management of Fistula in Roux-en-Y Gastric Bypass

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Introduction: Fistula is one of the most frequent complications of Roux-en-Y Gastric Bypass (RYGB) and it is cause for great concern among experts. It can occur with leakage into the peritoneal cavity or drainage outside, which have different prognoses and management, what makes the differentiation between this two pathologies essential. The aim of this study is to investigate the incidence of fistulas and their management.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by the same surgeon of CITOM from 2001 to 2012.

Results: A total of 2221 procedures were performed, 1110 by laparoscopic and 1111 by open surgery. The incidence of fistula was 1.4%; half of these had leakage into the peritoneal cavity and the other half had drainage to the external environment. The first ones was required surgical treatment, with an average of two interventions until resolution of the cases. And the second ones submitted to non-operative treatment and had their resolution in an average of 21 days of hospitalization. There was only one case of death related to this complication, which was a fistula with leakage into the abdominal cavity.

Conclusion: Fistulas are frequent complications in RYGB and its management and prognosis are directly related to the pathway, into the abdominal cavity or outside. Fistulas with leakage into the abdominal cavity have severe repercussion and require surgical treatment. Fistula with drainage to the external environment can be managed only with conservative non-operative treatment.

P.222 Weight Regain After Bariatric Surgery

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Introduction: Bariatric surgery is the most effective therapeutic option for morbid obesity. However, like any surgical procedure, it has complications that can occur in short, medium and long term period. Weight regain is the main long-term complication, which makes questionable the treatment proposed by this method.

Objective: To study and compare weight regain over the minimum weight obtained after at least two years of post-operative period of patients undergoing bariatric surgery.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by the same surgeon of CITOM from 2001 to 2010.

Discussion: Is a fact among surgeons that after a period of 18 to 24 months, which occurs the greatest loss of weight excess after surgery, certain weight regain may be observed in patients undergoing bariatric procedures. The factors that influence on the maintenance or regain of weight includes type of surgery performed, the values of preoperative body mass index (BMI), presence of binge eating disorders, increasing the volume of food ingested due to pouch dilatation, occurrence of gastro-gastric fistula and adherence to multidisciplinary support.

Conclusion: Weight regain is the most feared complication of bariatric surgery. The surgical approach, by laparotomy or laparoscopic techniques, as well as the use of contensor ring, seems to have no direct relation with weight regain. The longer the period after surgery, the higher the levels of weight regain, which reinforces the importance of patient adherence to the multidisciplinary team.

P.223 Revisional Bariatric Surgery for Late Failure After Bypass Surgery

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After Bypass surgery for morbid obesity, weight regain, or inadequate weight loss, with Body Mass Index (BMI) always over 35, need revisional surgery.

Lengthening of the Roux-en-Y (1, 4), reduction of the gastric pouch (2, 4), adjustable gastric banding (3), or Duodenal Switch (5), are the options of the literature, but the quality of the Bypass is neither studied. For the author, inadequate gastric pouch or short Roux-en-Y are perhaps cause of the failure.

421 Bypass were done for a weight average of 123.6 Kg and a BMI average of 45.84, with a weight average of 73 Kg after 78 months. 12 patients were reoperated on between 1/02/2012 and /03/2013, 70.1 months (28–99) after the Bypass for inadequate weight loss or weight regain.

After upper gastrointestinal endoscopy and study of the gastric pouch, of the gastrojejunal anastomosis, and tracking down of an Helicobacter Pylori infection, reoperation was done with measure of the Roux-en-Y, and of the gastric pouch, all gastrojejunal anastomosis being end to side by circular stapler.

In one case, nothing was changed; in 4 cases, a sleeve on the left side of the GJ anastomosis was done with 70 cm lengthening of a Roux-en-Y measured less than 100 cm; in 7 cases, 70 cm lengthening of a Roux-en-Y alone, measured less than 100 cm. The follow-up today do not authorize a conclusion, but after 6 months, there is no result with the Sleeve, compared to the lengthening of the Roux-en-Y with weight loss resume.

In conclusion, because elasticity of the small bowel, the Roux-en-Y can be very short after some months, even good measure during the initial operation, and lengthening can resume weight loss. Before difficult transformation in Duodenal Switch, or ileal Bypass, evaluation of the Bypass is mandatory, Roux-en-Y being sometimes very short.

P.224 Intraluminal Migrated Adjustable Gastric Band After Banded Bypass into the Terminal Ileum: A Case Report of Laparoscopic Band Removal

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Introduction/Background: Erosion of gastric banding is a well-known complication. We report a rare case of erosion and migration after banded bypass (BB) surgery with an adjustable gastric band.

Clinical Case: A case of a 47-year-old woman with an extensive history of bariatric surgery; vertical banding gastroplasty, converted into a LRYGB and finally a banded bypass (BB). The BB was complicated by a portal infection, followed by access port removal. After more than a year she presented with excessive pain in the lower abdomen. Abdominal radiology and computed tomography revealed a corpus alienum in the right lower quadrant: a circular band of the banded bypass including the port tube: the band was migrated intraluminal in the terminal ileum.

Treatment: Colonoscopy was used to try to remove the band. Under general anaesthesia the scope was inserted up to the first part of the ileum, but unfortunately the band wasn't visible. Via laparoscopic approach the band could be removed from the ileum. The patient left the hospital after 1 week in good condition.

Conclusion: In our experience, erosion is a common complication in this type of bariatric surgery. This is one of the reasons BB with an adjustable gastric band is no longer performed in our hospital.



P.225 Technical Complications After Laparoscopic Gastric Plication

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Introduction: Laparoscopic gastric plication (LGP) is a restrictive method with 13 years' experience. Some complications have seen in more than 1000 cases during 13 years. The aim of this presentation is to speak about detail of it.

Method: LGP has done in all of morbid obese cases with BMI between 35 to 45 with enough motivation and cooperation for post-operative period of diet and exercise. It was one-row plication during first 6 years and two-row in the remaining period. All of cases were under control of author' protocol at least during first 6 months including diet and exercise and follow up program (every 2 weeks visit) with data recording. Patients have protocol of follow up until 2 years and per case after it. Any complication has referred to author due to new method and new form of complication.

Result: Technical related complications of LGP subdivided to three important groups. G1: Leakage: 5 cases due to instrumental trauma (1 case), suture line (2 with 2-row and 1 with 1-row) and explosion of removed fold (1). G2: Obstruction at suture line: 6 cases (4 cases with 2-row and 2 with one-row) mainly at distal knot (one at middle). G3: unusual regain due to removal of inverted fold (25: 23 one-row) or rupture of thread (6: 4 one-row).

Conclusion: complications of LGP are very low in compare to other restrictive methods.

P.226 Conservative Treatment of Anastomotic Leakage After Bariatric Surgery

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Introduction: Anastomotic or staple line leakage is a feared complication in bariatric surgery. We analysed our experience with both operative and conservative treatment of anastomotic leakage after bariatric surgery.

Methods: A cohort patients undergoing bariatric surgery were subtracted out of a prospective database. The database and computerized hospital notes were analysed.

Results: Between 2008 and 2011; 1235 patients underwent laparoscopic bariatric surgery for morbid obesity. In 27(2%) patients anastomotic or staple line leakage was diagnosed: 8 after Sleeve gastrectomy and in 18 patients after Gastric bypass, 1 after BPD-Scopinaro. Most patients were admitted to Intensive Care unit (ICU). Mean ICU stay was 15 days and mean hospital stay was 35 days. Early leakage was diagnosed in 11 (11/27) patients within 24 hours after primary surgery: operative treatment consisted of relaparoscopy, if possible over sewing of the leak and always drainage of the peritoneal cavity. In 3 (3/11) of these patients additional endoluminal stenting or endoluminal drainage was necessary for refractory leak. In 16 (16/27) patients leakage was diagnosed after 24 hours (2–7 days), requiring conservative /endoscopic treatment in 8 (8/16) patients. Relaparoscopy was performed in 8 (8/16) patients. In 7 (7/8) of these patients additional endoscopic treatment was necessary for refractory leak.

Conclusion: Anastomotic or staple line leakage can be successfully treated with relaparoscopy within 24 hours after primary surgery. In late diagnosed leakage (>24 hours after primary surgery) conservative or endoscopic treatment is recommended because reoperation has a high risk of refractory leak.

P.227 Rhabdomyolysis: A Rare Complication After Bariatric Surgery

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Bariatric surgery requires positioning a morbidly obese patient on a relatively hard operating table which may lead to compression injury of the skeletal muscles and development of kidney failure. A 187 kg (BMI 64 kg/m²) 45-year-old heavy smoker patient with severe peripheral lymphedema and respiratory difficulties was admitted to our clinic. After a 45 days of preparation, a sleeve gastrectomy procedure was performed. The procedure lasted longer (215 minutes) than anticipated due to difficulties in retracting the massive liver. After extubation, she was quite agitated and blood gas analysis revealed carbon dioxide retention and acidosis. Her blood gases were corrected in the intensive care unit with application of BPAP under sedation. When the patient was sent back to the ward next day she developed excruciating back pain and her urine color darkened. Rhabdomyolysis was suspected and a creatine phosphokinase level (CPK) of 11554 U/L confirmed the diagnosis. Massive diuresis with furosemide and mannitol and intensive hydration (over 8 liters a day) corrected the increase in BUN and creatinine. The CPK level was 2280 U/L on the 5th day. She was discharged on the 8th day with oral tramadol due to continuing back pain. On the first postoperative control one week after discharge, she had limited back pain and normal lab results.

Although it is a rare complication, rhabdomyolysis should be suspected in all bariatric patients with severe postoperative muscle pain. Diuresis must be induced as soon as possible in order to prevent renal failure. Proper use of soft pads and cushions could prevent development of such lethal complication.

P.228 Surgical Treatment of Chronic Staple Line Leaks following Sleeve Gastrectomy is Safe and Effective

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Introduction: The most serious complication with Sleeve Gastrectomy (SG) is staple line leak (SLL). Non-operative treatment is not always successful. Surgical treatment is effective but is rarely described.

Methods: Retrospective review of records of patients with SLL managed from 03/2008 to 08/ 2012.

Results: Eight patients were identified (five females and three males) with an average age of 34 years (23–46) and a baseline weight of 112 kg (72–146) and BMI of 38.3 kg/m² (25.8–47.6) All patients underwent primary SG (two open and six laparoscopic). The average time of SLL presentation was 23.7 days (7–92 days) and time to surgical management was 200 days (33–759 days) from the date of primary SG. All patients underwent prior intervention (Surgical exploration (6), CT guided drainage (4); Stenting (1) and Roux-y-gastric bypass (1). The surgical approach involved transection of the alimentary tract at or proximal to the fistula with a Roux-y-reconstruction to the small bowel (7 open and one laparoscopic). There was no mortality. Four patients (50%) developed serious complications but all were managed successfully. At a mean follow-up of 24 months (6–60), all patients were satisfied with no major difficulties with eating. The mean weight and BMI were 82 kg (57–125) and 27.8 Kg/m² (22.5–36.5) respectively with a percent excess weight loss of 91% (47–120).

Conclusion: Surgical management of SLL following SG was uniformly successful and led to sustained weight loss preserving the primary aim of bariatric surgery. Post-operative morbidity was high but is expected given the difficult nature of this problem.

P.229 Laparoscopic Management of Persistent Strictures After Laparoscopic Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy (LSG) has become a common option in the management of morbid obesity. Although this procedure seems easier, many caveats remain, especially in terms of leakage. Other serious complications include strictures, bleeding, and gastro-esophageal reflux disease (GERD). Strictures are related to operative technique but also to healed leaks and fistulas. To our knowledge, the literature reports on the physiopathology and management of strictures after LSG are scarce.

Material and Method: A retrospective analysis of our database provided a total of 16 patients who underwent laparoscopic surgery for the treatment of strictures. A comprehensive review of each case was done including their management.

Results: Sixteen patients were treated laparoscopically for strictures. There were 8 females (Mean age: 40.6 yrs). Most common complaints were dysphagia (n=14) and/or gastro-esophageal reflux disease (GERD) (n=8). Body Mass Index (BMI) was 30.5 Kg/m² ±9.3. Fourteen patients underwent a seromyotomy (SM) and 2 a wedge resection (WR) of the stenosis. After SM morbidity included 5 leaks on the short term and 5 reoperations on the long term. Of the 16 patients, 12 were treated satisfactorily, 3 required endoscopies and 1 had minimal GERD symptoms.

Conclusions: Strictures and stenosis can be managed by laparoscopic approach with acceptable results. SM can be useful but carries a high complication rate. Accurate technique with parcimonious use of coagulation and possibly with the systematic use of an omental patch might lead to better results. The wedge resection of the stomach including the stricture was performed successfully in 2 cases.

P.230 Predictors for Adverse Outcomes in Laparoscopic Primary and Revisional Roux-En-Y Gastric Bypass Procedures

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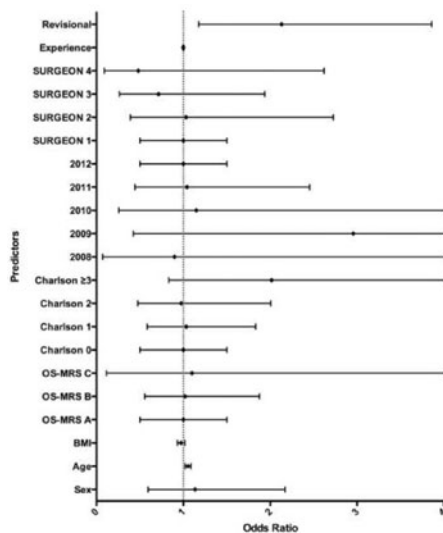
Background: A clear volume-outcome relationship has been reported for laparoscopic Roux-en-Y gastric bypass. This study aims to detect attributing factors in predicting outcome based on patient characteristics. This information may lead to a better patient selection during the starting years of a bariatric facility and can be used to give the patient a complete insight in the risks involved in these procedures.

Method: We retrospectively analysed the records of the 863 consecutive patients who received a primary or revisional laparoscopic Roux-en-Y gastric bypass procedure from December 2007 until July 2012. Primary outcome is the development of complications within 30 days of surgery. A binary regression model including gender, age, Body Mass Index (BMI), Obesity Surgery Mortality Risk Score classification (OS-MRS), Modified Charlson Comorbidity index, calendar year, surgeon and surgeon experience was constructed.

Results: The overall complication rate was 10.7%. Two patients (0, 2%) died within 30 days after surgery. We found a significant association between patients' age (OR 1,053, 95% CI: 1,021-1,085, $p=0,001$) and revisional procedures (OR: 2,132, 95% CI: 1,176-3,861, $p<0, 05$) and the development of complications. Surgeon related factors like which surgeon performed the operation or surgeons experience were not associated with a higher incidence of complications.

Conclusion: This study reveals age and revisional procedures as predictors for adverse outcomes in patients undergoing laparoscopic bariatric surgery whilst patients' gender, BMI, Modified Charlson comorbidity index, OS-MRS classification, calendar year or surgeon related factors were not. Applying patient selection and gained familiarity by our center as a whole probably eliminated these factors.

Figure 1: Factors predicting short term major complications in patients undergoing laparoscopic Roux-en-Y gastric bypass procedures



P.231 Metabolic Surgery: Surgical Profile and Complications of 910 Cases Performed in CEMMS (SA)

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Introduction: Metabolic surgery in South Africa is pursuing international standards of accreditation. Extensive database keeping allowed for a critical review of surgical profiling, surgical morbidity and mortality, as well as a preliminary health economic analysis.

Methods: Prospective data collection 2008–2012 of 910 consecutive cases performed by a single principle surgeon and unchanged team.

Results: Surgeries in %: LGBP 80.6, BPD-DS 8.5, LGB 0.02, Revision 6.3%, OGB 4.2%. LGS 2.0%. Patients in the BPD-DS group have a more adverse metabolic profile, higher incidence of DM and higher anaesthetic risk. *H. Pylori* was present in 28.5% on pre-op gastroscopy. Significant ethnic differences observed in this finding with the highest prevalence in the black group at 76.1%. Stomal ulceration present in 16% overall, tested at 3 months and negative for *H. Pylori* at onset. The first 250 cases performed had surgical morbidity of 6%, and the remainder of cases up to 910 had morbidity of 2.5%. There has been no surgical mortality. Theatre time decreased from 2h50min in 2007–2009, to 2hr 10min 2009 – 2012, despite a 7 point BMI index increase and a more than 300% increase in BPD-DS surgeries. Hospital costs increased at 23.4% over 6 years. LOS decreased from 5.1 days to 3.4 days

Conclusions: A more difficult patient profile is a natural evolution of a more advanced team but morbidity and mortality, as well as cost efficiency can improve with a high standard of conduct and an experienced and consistent team.

P.232 Postprandial Neuroglycopenic Hypoglycaemia Developing After Bariatric Surgery: Frequency and Management

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Introduction: Postprandial Neuroglycopenic Hypoglycaemia developing after Bariatric surgery is a well recognised complication. To determine the frequency and management we reviewed all 1088 bariatric surgery patients operated on in our hospital over a 3-year (August 08 – July 11) period.

Method: Postprandial neuroglycopenic hypoglycaemia was defined as the presence of typical neuroglycopenic symptoms with a reported blood sugar of <3.5 mmolar and confirmed hypoglycaemia as a blood sugar of <2.8 mmolar with confirmation by a third party.

Results: Out of 1088 bariatric surgery patients, 48 patients had suspected hypoglycaemia (incidence 4%) and 21 patients had confirmed hypoglycaemia (2%). Amongst those with hypoglycaemia, male sex and previous diabetes mellitus were more common than those without hypoglycaemia, but age, ethnicity and rate of weight loss were similar. Laparoscopic Roux-en-Y gastric bypass (LRYGB) was associated with hypoglycaemia ($p<0.05$) but laparoscopic sleeve gastrectomy (LSG), laparoscopic adjustable gastric banding (LAGB) and duodenal switch (DS) were not. The time of onset of hypoglycaemia is 15.91 ± 10.04 months after surgery. 43 patients required only dietetic education, 1 patient required acarbose and 2 patients required octreotide. Some of the patients presenting with hypoglycaemia were subsequently shown to have factitious hypoglycaemia, dissociated psychiatric states and primary cardiac arrhythmia.

Conclusion: 2-4% of patients have hypoglycaemia after bariatric surgery. Hypoglycaemia is associated with pre-existing diabetes, male sex and LRYGB. Almost all cases can be managed successfully by dietary education.

P.233 Bariatric Surgery in Patients Over 65 Years Old: Our Experiences in Long Term Follow Up

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Introduction: Age restrictions in bariatric surgery (BS) are less rigidly employed in the current era of refined anesthesiology, effective critical care, and high quality surgical outcomes. The aim was to report the safety and outcomes of BS in patients over 65 years old in our institutions.

Methods: Retrospective review of prospectively collected database of patients aged over 65 years who had undergone BS with the same surgical team from 2005–2011. Demographic data, % excess weight loss (%EWL), co-morbidities resolution and morbid-mortality were evaluated. Data are expressed as average ± standard deviation.

Results: 5293 patients underwent BS, 127 (61,41% female) were over 65 years old. The mean age was 67,03±2,08 (76–65) years, initial weight 129.75kg and initial BMI 48.9kg/m². Of the 127 patients, 3 (2.36%) had undergone laparoscopic adjustable gastric band (LAGB), 9 (7.09%) laparoscopic sleeve-gastrectomy (LSG), 1 (0.79%) laparoscopic conversion from LAGB to laparoscopic Roux-en-Y gastric- bypass (LRYGB) and 114 (89.76%) LRYGB. %EWL was 75,58±19, 72,10±19, 66,35±23, 64,16±21, 55,73±31, 51,9±22, 57,23±32 at 1, 2, 3, 4, 5, 6 and 7 years respectively. The postoperative resolution of hypertension and type 2 diabetes were 60.67% and 69.39%.

Complications: G-Y anastomotic leak (3.12%), internal bleeding (0,78%), anastomotic ulcer (3.15%) and anastomotic strictures (3.12%). 30-day mortality was 0,78% and mortality after 2 years no related to BS was 2,36%.

Conclusion: BS offers an acceptable safe and effective alternative for the treatment of morbid obesity and related co-morbidities in the elderly population, when it is performed by an experienced group.

P.234 Sleeve Gastrectomy Leak: Endoscopic Management, a Case Series

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Introduction: One of the most feared complications of sleeve gastrectomy (SG) is gastric fistula, conventionally managed through clinical and surgical treatment. Common endoscopic approaches include clips, sealants and stents; however, results are often conflicting. Our aim is to describe a novel, safe and minimally invasive endoscopic technique for the treatment of SG gastric fistula.

Methods: Case series of 18 patients with SG fistulas managed by endoscopic intervention through stricturotomy, septotomy, stent implant and balloon dilation.

Results: Most common leak source was His angle (n=15), progressing to gastrobronchial fistula in 2 cases, and gastric body in 3. Seventeen cases had a gastric pouch stenosis at different spots: incisura angularis in 8, and proximal gastric body in 9. Endoscopic techniques used were: aggressive endoscopic dilation + stricturotomy + gastric septotomy + placement of stents (n=11) with a mean number of 12, 6 sessions; endoscopic dilation + septotomy (n= 07) with a mean number of 6,14 sessions. Leak healing was achieved in 17 cases and disease control in one case, in a 6-month follow-up. Complications included self-limited mild upper digestive bleeding (n=1). There were no mortality.

Conclusion: Aggressive endoscopic dilation, stricturotomy, gastric septotomy and stent placement promote healing of the SG gastric fistula. It has a low overall morbidity, avoiding abdominal or thoracic reoperations.

Treatment	N	Mean # of sessions (n)	Complications (n)	Cure/Control (n)
Ballon dilation, stent implant, septotomy and stricturotomy	11	12,6	01 (hematemesis)	10 / 01

Ballon dilation and septotomy 07 6,4 0 07/ 00

Table 1. Treatment used, complications and success rates

Surgeries



P.235 Complications of Endoluminal Stents in Treatment of Leaks After Gastric Bypass

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Introduction: gastrointestinal leak is the most serious life-threatening complication following bariatric surgery. The use of endoscopic stents in bariatric surgery leak management became an essential tool in treating leaks. Stent placement has its complications adding issues in the leak management. Aim of work: a prospective study evaluating the use of stents in bariatric surgery leak management. **Methods:** Of 2742 bariatric procedures, 61 patients had gastrointestinal leaks (2.2%), of these 18 patients had nitinol esophago-jejunal stents placed in the course of leak management. 14 stents were placed endoscopically and 4 were placed operatively. One patient had endoscopic clipping of the leak combined with stent placement. Patients were followed in terms of placement technique, complications and leak cure. **Results:** 3 patients (16.6%) had distal migration of the stent to the small bowel 2 were removed and one had a second stent placed inside the first one. one patient (5.5%) had distal migration with inversion of the top of the stent in the upper pouch with complete obstruction worsening the leak. One patient (5.5%) had complete erosion of the Fobi ring around the stent. The total stent complication rate was 26.6%. only one patient did not heal the leak. **Conclusion:** Endoluminal stents are very useful in the management of leaks after gastric bypass. Stents have a 26.6% complication rate when used when used to treats gastric bypass leaks. Management of stent complications is simple. Banded gastric bypass needs band removal prior to stent placement to prevent intraluminal band erosion complication.

P.236 Endoscopic Management with Nitinol Devices in Gastric Bariatric Leaks

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Introduction: Gastric fistulae after bariatric surgery are potentially lethal. Their treatment with endoscopic nitinol devices gained a relevant role in the recent past. Herein we report our experience.

Materials and methods: At our institution, between December 2008 and April 2012, six gastric fistulae secondary to bariatric surgery (4 sleeves, 2 gastric banding removal) were treated endoscopically. Fistulae were multiple in two cases (33%) and complex in three cases (50%). Nitinol double-pronged clips (10–12 mm), loaded on a deployment catheter introduced through the operative channel of the scope (OTSC), and/or fully PTFE covered esophageal self-expandable nitinol stents were positioned (Width 22–24 mm; length 18–23 cm).

Results: Two patients underwent laparoscopic drainage (33%). A preliminary endoscopic treatment (naso-fistula catheter) was carried out in four patients (67%).

Three patients were successfully managed endoscopically, aspirating the extra-luminal abscess, then closing the fistula by means of clip, and finally diverting by endo-luminal gastrointestinal stenting. In 2 cases the fistula orifice was closed by applications of clips. No death occurred. Migration of the stent happened in two cases. The average number of endoscopic sessions was 2 (range 1–3). Primary closure after one session was obtained in one case. In all cases endoscopic control four weeks later the initial procedure, demonstrated complete closure of the fistula. **Conclusions:** Modern nitinol devices show an innovative superelasticity and shape memory that seems to be effective, especially if they are used as soon as fistula is detected. Surgery is mandatory if the patient's condition is rapidly worsening.

P.237 Revisional Surgery for Failed Restrictive Procedures in Morbidly Obese Patients

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Introduction: 1361 surgical interventions for weight loss have been performed in the Bariatric Surgery Centre from the Second Surgical Clinic, Cluj Napoca during 17 years (1997–2013).

Method: The patients were aged between 18 and 85, 82 % were female, weight ranged between 95 and 270 kg, BMI between 36 and 80 kg/m² and 64 % had a BMI between 40–49 kg/m². 1111 patients underwent silastic ring vertical gastropasty. There were 162 surgical interventions performed for body contouring and 88 (8.6%) for revisions: 39 (3.81%) cases of stenosis and 41(4%) cases of enlargement of the ring.

Results: Excellent results were obtained in 91.15% cases, excessive weight loss and weight regain were observed in 93% and respectively 3.92% cases. Mortality was present in 6 cases (0.54%). We present the gastric changes after reinterventions, the causes of stenosis and enlargements through the rupture of the suture line and migration of the ring into the lumen. Revisional surgery has three options: reversion, reconstruction and conversion. We performed laparoscopic/open reversions in 8 patients (0.78%) and reconstructions in 39(3.81%) cases for stenosis and in 36(3.51%) for enlargement due to migration. Conversion into open sleeve gastrectomy was done for the enlargement of the stoma. Gastric bypass was proposed for the cases of stenosis and enlargements. **Conclusion:** The restriction with the ring has no high percentage of revisions. However, we prefer for the first revision performing the reversion through the suppression of the ring or conversion into sleeve or bypass instead of reconstruction through the same technique.

P.238 Incidence of Complicated Gallstones After Laparoscopic Sleeve Gastrectomy

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Introduction: The surgically induced weight loss constitutes a risk factor for gallstone formation. However, the natural history of gallstone formation after laparoscopic sleeve gastrectomy (LSG), the incidence of symptomatic gallstones requiring intervention and the proper setting of cholecystectomy is not well established.

Method: A retrospective review of our prospectively maintained database including patients underwent LSG from August 2006 to December 2011 was performed. All the patients were screened for cholelithiasis preoperatively as per protocol. Demographics, medical records and histopathologic data were also reviewed.

Results: A total of 165 patients underwent LSG. Gallbladder data were collected for 150 patients (92.6%). 12 of our patients had already undergone a cholecystectomy preoperatively (8 %). Preoperative evidence of gallbladder disease was identified in 32 of our patients (23.2 %). Simultaneous cholecystectomy was performed in 9 of these patients, who were symptomatic. Postoperatively, three patients who had evident cholelithiasis preoperatively and did not perform simultaneous cholecystectomy developed complicated cholelithiasis during the follow-up (acute cholecystitis, biliary colic, and pancreatitis). From the cohort of the patients who had not preoperatively cholelithiasis, five patients experienced complicated gallstones after LSG, necessitating surgical intervention. Total cumulative incidence of complicated gallstones was 5.8% (95% CI: 1.7-9.0%). During a median follow-up of 26 months, 7 patients required cholecystectomy, leading to a gallbladder disease-free survival rate of 93.1 % at 2 years. No patient underwent cholecystectomy before 9 months or after 23 months indicating the post- LSG effect.

Conclusion: Incidence of complicated gallstones after LSG during the mid-term postoperative period is low.

P.239 Why Greater Curvature Plication May Fail?

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The Greater Curvature Plication (GCP) has been recently introduced among the bariatric procedures and the initially results were very attractive (Several published and presented papers are discussed). For patients with BMI below 45, the technique was considered to be as efficient as most of the bariatric procedures but association far less postoperative complications (leaks, bleedings, migration, etc.). The later experience demonstrated that the procedure is not the one we are looking for. Trying to answer to the question if GCP may fail? Hot points are to be discussed: the weight loss/metabolic efficiency, the postoperative complications, the patient comfort and satisfaction, the consensus on operative technique, the redo/exit possibilities.

The actual place of GCP is discussed. Selected cases (low BMIs) having a very accurate technique (presented in the paper) may have a low risk for fail after GCP. Thus we may prevent the complications and/or the failure of the GCP.

P.240 The Mechanism of Leak Production/ Strategy to Prevent Postoperative Leaks in Laparoscopic Sleeve Gastrectomy

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Objective: To identify the mechanisms of leak production in Laparoscopic Sleeve Gastrectomy (SG) and propose a safer surgical pathway for this procedure thus offering solutions for leak prevention.

Method: We have analyzed every single complicated case by evaluating the gastric tube during an early re-laparoscopy (additional to the surgical control of the fistula) and by matching the lesion with the initially applied surgical technique (watching the recorded file). The possible causes of leak production were listed and were considered in establishing a leak prevention surgical protocol (LPSP) for LS, introduced in practice from 2010. The postoperative leak rate (PLR) in the 2 cohorts of patients, operated on before (Group A) and after this date (Group B) was analyzed.

Results: A wide range of mechanisms of leak production were described: Stapled line ischemic gaps (misplacement, inadequate dissection), electric lesions, misconstruction / fashioning errors of the sleeve (narrowing, twisting, incomplete dissection), stapling too close to the esophagus, intra-mediastinal strangulation of the upper part of the sleeve, postoperative bleeding / bleeding preventing techniques (over-sewn stitches, ML haemostatic titanium clips), additional material (stitches, non-resorbable buttress material). The LPSP took care about all these

situations. The total number of the patients who underwent LS in the center was 2581 (2005–2013). Group A encountered 1065 patients and Group B 1416 patients. The 2 groups had similar characteristics; The PLR was 1.03% (11/1065) in Group A, nil in the group B, difference statistically significant ($p < 0.001$).

Conclusion: The leak incidence after LS may be dramatically reduced if we are aware of the mechanisms of leak production and avoid their occurrence by applying an adapted protocol. Moreover, understanding the functional requirements of this long, narrow, L-shaped, high pressure gastric tube may contribute to the further extension of the laparoscopic gastric sleeve resection as a first option metabolic procedure.

P.241 “One Anastomosis Gastric Bypass” Versus “Roux En Y Gastric Bypass” as Salvage Technique After Failed Gastric Banding: A Retrospective Analysis of 80 Cases

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Introduction: The classical “Roux en Y Gastric Bypass” (RYGBP) is still the standard technique between all the ones being used nowadays.

The “One anastomosis gastric bypass” (OAGBP), is an evolution of the “Minigastic bypass” described by Robert Rutledge in 2001, is a well known and progressively frequent but still controversial technique.

In our group, after an experience of 10 years using the RYGBP as a salvage surgery after failed gastric banding, in 132 cases, we decided to adopt the OAGBP as our preferential bariatric technique also in this situation. The theoretical main reasons for that shift are related to the increased safety, maximized weight loss, long term weight loss maintenance and reversibility of the operation. **Method:** Retrospectively we evaluated data of the surgical management of revisional cases for conversion, after failed or complicated gastric bands to gastric bypass. We selected the last 40 cases of each technique since May 2010.

Results: All cases were performed by laparoscopy without any conversion. In both groups the conversion has been performed in one single step (17 cases, 42.5%). Data showed lower morbidity with OAGBP (2.5% against 7.5%) and better weight loss in the OAGBP cohort after a median follow up of 16 months (67% against 55%) in patients revised after gastric band failure or complications. None had statistic significance ($p > 0.1$) by the chi-square contingency table analysis.

Conclusion: It seems to there is a difference in favour of OAGBP for conversion of complicated gastric bands. In this study we didn't found statistic significance probably because of the short numbers. Prospective and more powerful studies are necessary to evaluate the benefit of the studied procedure.

P.242 Strategies for Managing Rhabdomyolysis in Prolonged Bariatric Surgery Operations > 240 mins

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Introduction: Postoperative rhabdomyolysis in bariatric surgery is a serious complication that can be related to prolonged surgery time, non-physiological surgical positions, high BMI, statins and acquired or inherited muscular susceptibility. We report on strategies for managing post-operative rhabdomyolysis.

Methods: Prospectively collected database over 3-yr period of Bariatric surgery patients was evaluated for prolonged operations (op. time > 4 hours) and development of rhabdomyolysis. All patients had added padding and were

awake when placed on operating table. Any patient complaining of trunk pain postoperatively had Creatinine Kinase (CK) levels evaluated. The preventive strategies for and management principles of rhabdomyolysis were analysed.

Results: Out of 29 patients with prolonged operations (total no. of operations - 543) 2 patients developed post operative rhabdomyolysis (incidence 6.89%, overall incidence 0.36%). A 59-yr old male patient with BMI 46kg/m² had laparoscopic repair of large hiatus hernia along gastric bypass, surgery time 450 minutes. Post operatively his CK levels rose to 27,709 U/L with deranged renal function tests. A 38-yr old female patient with BMI 49kg/m² had laparoscopic gastric bypass, surgery time 280 minutes. Post operatively her CK levels rose to 30,164 U/L. Her renal function tests were normal. Both patients were treated with aggressive fluid therapy successfully.

Conclusions: Prolonged operations can predispose to rhabdomyolysis. Proper positioning of the patient, shorter duration of operative time, measuring CK levels in patients with trunk pain and a high index of suspicion with aggressive fluid therapy are strategies in the management of rhabdomyolysis.

P.243 Should Sleeve Gastrectomy be Abandoned- Time to Retrospect?

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Introduction: Sleeve Gastrectomy has become extremely popular bariatric procedure worldwide within a decade. This resulted in increased enthusiasm amongst new bariatric surgeons as well as patients considering absence of malabsorption & shorter learning curve. The possible role of ghrelin in weight loss & equivalent impact on glycemic control made this a more acceptable procedure. Post sleeve gastrectomy nausea & occasional reflux is usually attributed to over eating or hi pressure pouch because of pylorus. Most of these patients are managed conservatively with medicines & counselling. This problem is usually not seen after gastric bypass surgery.

Method: All of our 5 year old sleeve patients who had persistent GERD symptoms were advised to get upper GI endoscopy done. However only few agreed for an interventional procedure & most wanted to continue with conservative treatment.

Result: All patients who agreed to undergo UGI endoscopy were found to have a moderate (3cms) to large hiatal hernia (5cms). Their pre-op endoscopy findings were re-visited which were normal. These patients were subsequently counselled for possible conversion to gastric bypass, since fundoplication is no more an option. All prefer to continue with conservative treatment at the moment.

Conclusion: Most of sleeve patients develop insidious reflux symptoms 2–3 years after surgery which are managed conservatively. However, universal upper GI endoscopy may reveal GERD & hiatal hernia in many patients. In our interpretation, sleeve is a reflux producing surgery & the high incidence of hiatal hernias may result in abandonment of 'Sleeve' in not distant future.

P.244 Complications in 350 Consecutive Cases of Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy is fast gaining popularity and has established itself as a viable option for the treatment of morbid obesity. It is not only easier to do but also easier to train. Complications are reported in 1-3%. Though

uncommon they present a formidable management challenge when they occur. We present our experience with complications of 350 sleeve gastrectomies.

Method: A standard surgical procedure as described by Ren et al. with minor modifications was performed in 350 patients with morbid obesity from June 2007 to February 2013. There were 116 males (33.14%) and 234 females (66.86%). All patients had protocolised post-op management. Retrospective analysis of case sheets and review of operative videos was done to record intra-op bleeding, other per and post operative complications.

Commonest sites of bleeding:

- Staple line bleeding requiring clipping 70.2%
- Serosal vessels or stomach wall 11.4%
- High short gastric vessels 2.8%
- Splenic capsular tear 2%

Intra-operative complications:

- Bleeding requiring blood transfusion 3 cases (0.85%)
- Malfunctioning of stapler 1 case (0.28%)
- GE junction narrowing noted per-operatively, converted to bypass 1 case (0.28%).
- Bougie induced lower esophagus perforation -1case (0.28%)
- Per-op splenectomy 1 case (0.28%)
- No Intra-op mortality

Immediate post-op complications:

- Bleeding necessitating re-exploration -3cases (0.85%)
- Bleeding necessitating blood transfusion 3 cases (0.85%)
- Immediate post-op mortality 1 case (0.28%)
- Splenectomy (Day1) -1 case (0.28%)

Delayed complications:

- Leak- 14_{th} post-op day: Presented as pelvic abscess- 1 case (0.28%)

Conclusion: LSG is a useful bariatric procedure. Our experience shows that the procedure can be performed with low complication rate in a unit dedicated to advanced laparoscopic work.

P.245 Report of Complications After Gastric Plication

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Introduction: Gastric plication (GP), proposed since 1969, has been practiced in humans and gained adepts only recently. Purported as a simple, cheap operation, supporters claim almost no complications on short-term follow-up. Final anatomical result raises concerns about safety, complications, durability and ease to reverse. We present the findings on a group of patients with complications or failures after GP.

Method: A retrospective search of a prospectively kept database was completed for the last 5 years. Although authors do not practice GP, patients with that operation requested help after complications. Data of first operation, symptoms and outcome was collected.

Results: 15 patients with GP-related complications. Age range: 23–54 (36). Time from GP was 9 days for one patient; others ranged 13 to 60 (26) months. Reasons for consultation: weight regain in 10, nausea and vomiting in 4, dysphagia and malnutrition in two, pain in three. Patient seen 9 days postoperatively had a gastric tear and peritonitis. 14 patients had reoperations: 9 LSG, 4 LGBP (chosen because full GP reversal was impossible) and one partial gastric resection with open abdomen. One patient is on study for gastric mass with ischemic gastric ulcer.

Conclusion: Serious complications and failures do happen after GP, and is not easily reversible. Under-report results from short follow-up and patients with bad results consulting somewhere else. Authors propose that GP should be considered an experimental technique and practiced under trials with ethical approval, long follow-up and bad outcomes accurate report before considering GP a safe and useful bariatric operation.

P.246 Laparoscopic Roux En-Y Gastric Bypass (LRYGB) in a Liver Transplant Recipient (OLT): Case Report and Intra-operative Video

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Introduction: Obesity is frequent before and after liver transplantation. In OLT recipient obesity increases morbidity and mortality mainly due to cardiovascular events leading eventually to graft loss.

Method: We present the intra-operative video and the case report of a patient who underwent, 15 years after OLT, LRYGB for Morbid Obesity (BMI 57) complicated by type II diabetes and severe hypertension. Moreover an incisional hernia repair was performed nine years after OLT. The pre-operative hepatic values were normal (AST 51 U/L, ALT 57 U/L); the hepatic biopsy revealed a mild steatosis (15%).

Results: Pneumoperitoneum was achieved introducing the first trocar through the intraperitoneal prosthesis over the umbilical scar. Laparoscopic adhesiolysis was performed safely with the ultrasonic dissector mainly between the greater omentum, the abdominal wall and the liver. A standard LRYGB was performed. No intraoperative and post-operative complications occurred.

During the follow-up at one and three months we registered a weight loss of 30 and 40 kg respectively (BMI 48 and 45), regression of hypertension and improvement of diabetes. At the same time the patient developed hyperammonemic encephalopathy (ammonia blood level between 220 and 370 mcg/dl). The hepatic function was not altered enough to justify the ammonia levels. The clinical conditions improved after oral carnitine supplementation, and the ammonia level slowly decreased to values around 110 mcg/dl.

Conclusion: LRYGB is feasible in obese OLT recipients, although further studies need to be carried out about the nutritional and metabolic modifications after LRYGB.

P.247 Review of Complications After 200 Cases of Laparoscopic Sleeve Gastrectomy

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Introduction: Laparoscopic Sleeve Gastrectomy has now come to be in terms of frequency the most common Bariatric/metabolic procedure in India. The reason for this could be the relative ease with which can be performed and the good results it gives as regards weight loss and resolution of comorbidities. Here we present a retrospective analysis of 200 cases of LSG looking for complications in the perioperative period and long term.

Methods: 200 cases of LSG performed by the same surgeon between June 2010 and June 2012 were analysed. The main complications were 1. Staple line bleeding 2. Staple line leak 3. Stricture 4. Urinary tract infection

Results: The following were the results 1. Staple line leak 0 cases 2. Staple line bleed 2 cases 3. Stricture – 1 case 4. Urinary tract infection 18 cases. Both cases of staple line bleed needed relaparoscopy on the first day, one showed an arterial spurter on the staple line, the other didn't show specific bleed. Stricture had developed in a patient in whom inverting seromuscular sutures had been put to avoid leak/bleed. Urinary tract infection occurred due to inadequate fluid intake

Conclusion: In our series the most sinister complication was Staple line bleed (1%). As a precaution after every LSG we now monitor the Packed Cell Volume (PCV) and Haemoglobin (Hb) every 3 hours for 24 hours. The patient who developed stricture needed relaparoscopy and re-levelling of sutures. All complications will be discussed in detail with supporting video.

P.248 Discovery of Gastric Tumors During a Bariatric Operation

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Introduction: Non-epithelial gastric neoplasms are rare entities, accounting for 1% of gastric cancers, ranking a distant third behind adenocarcinomas and lymphomas of the stomach with a frequency 4-20/million population. They include mostly gastrointestinal stromal tumors (GISTs), leiomyomas and leiomyosarcomas. At early stages, their small size and submucosal origin means that they may be missed by a routine endoscopy of the upper GI. The aim of this study is to present the gastric neoplasms that were found incidentally during a bariatric operation, laparoscopic sleeve gastrectomy (SG) or laparoscopic total vertical gastric plication (LTVGP).

Method: SG or LTVGP was performed on 278 patients, aged 20–60 years old. All had negative upper GI endoscopy 1–3 months prior to the operation.

Results: Three neoplasms were discovered (1%), all during LTVGPs. They were laparoscopically resected with clear margins and LTVGP was carried out without complications, without frozen sections, due to their small size. Histology revealed a microleiomyoma, 0.6 cm diameter, desmin positive. 2 GISTs were discovered, as defined by expression of cKIT and CD34. Both had 1 cm diameter, <1 mitoses /50 high powered fields and ki-67 < 10%.

Conclusion: The leiomyoma was benign and the GISTs were considered very low risk for malignancy. Still, they were much more frequent than in the general population. Larger studies may be needed to divulge their actual frequency, whether they may present technical intraoperative difficulties, or even be contraindications for bariatric operations. Further preoperative evaluation may be needed.

P.249 Venous Thrombo Embolism After Laparoscopic and Robotic Bariatric Surgery in Indian Patients

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Background: Venous thrombo-embolism (VTE) after bariatric surgery is a significant cause of morbidity and mortality. We evaluate our present prophylactic approach in this high-risk population in a single center in India.

Methodology: Data from our prospective database of bariatric patients is presented here. Data from January 2010 to mid January 2013 is presented. Patient profile especially with relation to the risk for VTE is presented. All patients were provided multi-modality VTE prophylaxis using perioperative and extended postoperative low-molecular-weight heparin (Enoxaparin 60mg preoperatively, followed by 60mg daily postoperatively for 4 weeks) and intraoperative mechanical prophylaxis (Graduated Compression Stockings and Intermittent Pneumatic Compression).

Results: A total of 173 patients underwent bariatric surgery during this period (Gastric Sleeve - 159 patients, Gastric Bypass - 14 patients). Fourteen patients underwent robotic bariatric procedures. The patients were followed up for a period of 13.8 ± 9 months. Patient profile - Age 40.2 ± 11 years, M:F ratio

73:100, BMI 46.5 ± 9 kg/m². The postoperative VTE incidence was 0.6%. There was one adverse bleeding event.

Conclusions: Long-term outcomes in larger groups of patients are needed to evaluate the long-term impact of current protocols in preventing VTE in bariatric Indian patients.

P.250 Post Sleeve Gastrectomy Leak and Fistula

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Case Summary

- 25 years female
- Student
- BMI- 38 kg/m²
- No co-morbidities
- No past surgical/medical history

May 2010

- Patient underwent Lap Sleeve Gastrectomy in May 2010.
- Intraoperative course was uneventful.
- Postoperative was started on liquids on POD1 and mobilized on POD1.
- POD 3, patient had Severe Abdominal pain with fever.
- Oral contrast study s/o leak at G-E junction from superior margin of staple line
- CT (IV+Oral contrast) scan done s/o leak with large Collection in left subdiaphragmatic area
- On POD3, Patient subjected to ReLaparoscopy and primary closure of leak with drainage of collection and placement of wide bore drain.
- Patient also subjected to feeding jejunostomy
- Postoperative leak persisted and formed gastrocutaneous fistula
- Patients endoscopy showed ?internal opening just below G-E junction.
- Patient underwent endoscopic stenting.
- Even after stenting leak persisted as external fistula
- Patient again subjected to endoscopic glue injection into internal opening, but leak couldn't stop.

Sept 2010

- Sept 2010, patient underwent Open surgery with resection of fistula and wide excision of internal opening with primary closure (Stapled Closure).
- Post surgery patient was asymptomatic for 8 months.

July 2011

- Patient had Fever with abdominal pain.
- CT scan s/o leak with left subdiaphragmatic collection.
- Patient advised drainage.

March 2012

- Patient again had high grade fever with chills and abdominal pain.
- CT scan s/o large collection in left subdiaphragmatic area
- Collection drained under anaesthesia and again formed controlled external fistula.
- Antibiotics as per culture and sensitivity.

May 2012

- Postoperative leak persisted as external fistula.

- Patient underwent endoscopic Long Covered stent placement to lower esophagus and stomach
- Post procedure patient improved symptomatically (no fever/pain)
- Due to esophago-gastric stent, patient had severe chest pain and retrosternal discomfort.
- Hence her stent was removed after six wks.

Conclusion:

- In view of above findings and persistent gastro-cutaneous fistula we decided to go for total gastrectomy with gastro-jejunostomy..
- Post-op uneventful. Post Sleeve Gastrectomy leak and fistula

P.251 Gastric leak after Laparoscopic Sleeve Gastrectomy: The Evaluation of Stent Placement, 16 Consecutive Cases

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Introduction: Sleeve gastrectomy involves the creation of small gastric reservoir based on lesser curvature of the stomach, which is fashioned by a longitudinal gastrectomy that preserves the antrum and pylorus together with its vagal innervation. Staple-line complications like bleeding or gastric leak can have catastrophic results in patients who underwent LSG. Both complications can lead to significant morbidity and even death. When bleeding is identified, conservative management of stopping anticoagulation and appropriate fluid or blood resuscitation is usually sufficient in most of cases. Management of the leak, however, is usually difficult and may include conservative treatment with the placement of endoscopic stents or may require reoperation that includes peritoneal draining and placement of drainage tubes or even total gastrectomy.

Patients and methods: From 2007 to 2012 16 patients that underwent sleeve gastrectomy in our institution presented a leak at the level of the angle of His. Due to the fact that standardized criteria do not exist in the management of gastric leak in 8 patients a stent was placed endoscopically (group A) and the other 8 were treated conservatively (group B).

Results: From the eight patients that were allocated to the arm that were treated with stent placement (group A) 2 patients (12,5 %) had a successful management of the leak , while in two patients the stent-treatment failed due to stent migration and they underwent a total gastrectomy in order to be cured. The mean hospital stay for this group is 46,25 (range 20–91 days). In three patients the stent removed and a conservative treatment was followed with the assistance of drains that were left in place and kept until drainage stopped. In one patient a gastrocutaneous fistula occurred and the solution that was considered appropriate was the endoscopic placement of HistoAcryl glue at the internal opening of the fistula by an experienced endoscopist as well as at the external opening of it by the surgeon. In eight patients that were treated conservatively with antibiotics, parenteral nutrition and drain placement if they did not have any at the time of admission to the hospital. The drains were placed either under CT guidance or either in the operating room due to presentation of signs of sepsis at the time of hospital re-entrance. The mean hospital stay for this group B was 27 days (range 12–41 days). In this group three patients were readmitted with symptoms of dysphagia, fever and presented an intrabdominal abscess in CT tomography, while one patient failed to be treated conservatively and underwent a total gastrectomy. In Group B 7 patients were treated successfully although they had a long hospital stay, but no longer than the Group A.

Conclusion: The management of leaks after LSG is challenging and resources intensive. To our knowledge, there is no Consensus for treating this type of complication. It is known and reported that the use of drains plus alimentary support to control the fistula can help its resolution, even though the time to

resolution is unpredictable. Nonoperative managements as percutaneous drainage and Stent would be appropriate if there is contained fluid collection or abscess formation around the leak site without any evidence of peritoneal irritation. However, when the leak was found just after the operation and when the patient had peritoneal irritation as present case, immediate surgical exploration and primary repair of the defect could be an appropriate option to control the problem and to shorten the duration of treatment. In our series stent placement did not offer high success management rates nor shorter hospital stay.

P.252 Management of Leak Post Sleeve Gastrectomy

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Background: The most serious and life-threatening complication after Laparoscopic sleeve gastrectomy (LSG) is the post-operative leak. The purpose of this paper is to discuss the treatment options adopted in our center to treat this serious complication.

Methods: A retrospective analysis was performed for patients with confirmed leak on gastrograffin swallow, CT and/or EGD between January 2009 and July 2012.and the treatment plan was reviewed and analyzed to evaluate the role of stenting in the management of this dreadful complication. Eighteen patients was identified with leak post sleeve gastrectomy, both from our center and referred from other hospital. Our policy in management of leak includes CT guided drainage of the collection, TPN, NPO, EGD and stenting.

Results: All eighteen patients with Staple line leaks was treated using the same management plan. All the leaks happened between day 10 & day 21 post-operative. The most common leak location was at the gastroesophageal junction (seventeen cases 94.4%). 2 patients was taken for laparoscopic drainage due to multiple abscesses 11 %. Stenting and Nonoperative management (total parenteral nutrition, proton pump inhibitor, and antibiotics) was adopted in all cases. Percutaneous abdominal drainage was placed in all patients. Sixteen out of the eighteen patients improved totally with this method and the leak healed completely 88.8%, and two patients didn't benefit from the stent 11.2 % and developed chronic gastric fistula.

Conclusion: Nonoperative management (percutaneous drainage with stent) is feasible, safe, and effective in treatment of staple line leaks after LSG; although the number of patients in our paper is low, the healing with the use of the stent was 88.8%, furthermore, stenting is a much better alternative to other surgical procedures such as total gastrectomy or conversion to RYGB.

P.253 Gastric Bypass Revision for Unmanageable Post-thyroidectomy Hypoparathyroidism

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Introduction: Gastric bypass has the risk of hypocalcaemia and vitamin D deficiency because limitations in food intake and changes in calcium absorption. On other hand, thyroidectomy has the risk of parathyroid glands damage and secondary hypocalcaemia.

Methods: A 30 years-old woman, BMI 49,5, was operated on for morbid obesity. A laparoscopic banded retrocolic-retrogastric gastric bypass was performed in 2003. After an uneventful postoperative period, multivitamin supplements were prescribed. She had an excellent and maintained weight loss as well as blood tests. During 2011 she suffered a total thyroidectomy for

a Graves disease. She had a postoperative severe hypocalcaemia, resistant to calcium and vitamin D therapy, requiring multiple hospitalizations along the next year. Celiac disease was excluded and, after failure of all pharmacological treatments attempted, a surgical revision of her gastric bypass was indicated by a multidisciplinary team. The operation performed was: gastrectomy of the excluded stomach, section of the alimentary limb at the Roux-en-Y jejunojejunostomy and anastomosis of its distal end to the duodenum.

Results: Postoperative course was uneventful. Calcaemia was maintained in the lower normal range with 6 gr of calcium and 0.75 mcg of calcitriol “per os” daily. With this treatment the patient is asymptomatic 9 months after surgical revision.

Conclusions: Post-thyroidectomy hypoparathyroidism can be very difficult to control after gastric bypass. To restore the food passage through the duodenum and first part of jejunum improves calcium absorption and gastrectomy tries to avoid weight regain eliminating the main ghrelin source. A multidisciplinary approach is mandatory.

P.254 Gallstones and Morbid Obesity: To Treat or Not to Treat?

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Introduction: Several approaches have been suggested to deal with gallstone disease in morbidly obese patients proposed for bariatric surgery although a consensus as not been reached. The present study was designed to determine the prevalence of gallstones in obese patients before bariatric surgery and to evaluate the feasibility and safety of selective concomitant cholecystectomy in patients with symptomatic disease.

Methods: Prospective cohort of 463 consecutive patients presenting to our institution for bariatric surgery from January 2010 to December 2011. All patients considered for surgery were screened for history of gallstones by clinical exam and ultrasonography. Patients were followed at least for 12 months after surgery.

Results: Gastric band (49.2%;n=228) and Gastric bypass (45.4%;n=210) were the most frequent surgeries. At presentation, 21.6%(n=100) of the patients had gallstones (or history of cholecystectomy). Only 2.4% (n=11) of the patients had symptomatic disease at the time of surgery and thus were proposed for concomitant laparoscopic cholecystectomy and an extra 8.4% (n=39) had previous cholecystectomy. Of the 413 patients with “in situ gallbladder after surgery, only 12(2.9%) developed symptomatic gallstones and only 1 presented with complicated disease (acute pancreatitis). Development of symptomatic gallstones was independently related to the type of surgery performed and to the %EWL at 12 months. Patients with gastric sleeve and higher %EWL were the ones more likely to develop symptomatic gallstones.

Conclusions: The management of gallstones in morbidly obese patients should not be different from normal-weight patients. Performing a laparoscopic cholecystectomy in symptomatic patients is a safe and effective approach.

P.255 Combined Laparoscopy-assisted ERCP and Cholecystectomy After Roux-en-Y Gastric Bypass

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Introduction: Endoscopic access to the biliary tree after Roux-en-Y gastric bypass (RNYGB) remains technically challenging. However, in certain conditions

such as choledocholithiasis, cholecystectomy with endoscopic sphincterotomy and stone extraction can be indicated. The results of balloon enteroscopy-assisted ERCP post-RNYGB are disappointing, with a described success rate of only 60%. Therefore we introduced a laparoscopy-assisted ERCP (La-ERCP) as an initial approach in this population. The goal of this study is to assess the feasibility and results of the La-ERCP with cholecystectomy after RNYGB.

Methods: We retrospectively analysed the post-RNYGB patients who underwent a La-ERCP in our centre from November 2010 to November 2012. **Results:** Eight post-RNYGB patients (one male, seven females) were identified (mean age 58.7 years). Six patients had a laparoscopic RNYGB, 2 patients underwent an open procedure. Indications were radiologically proven and symptomatic choledocholithiasis (n=5) and recurrent biliary pancreatitis (n=3). The main step of this laparoscopic procedure is the guidance of an ERCP tube through a 15mm trocar introduced through a ventral gastrotomy made 5 cm proximal of the pylorus. In the same operative time all patients underwent successful biliary cannulation and sphincterotomy (+/ balloon extraction) and a laparoscopic cholecystectomy. No conversions to laparotomy were needed. ERCP findings included normal cholangiogram (n=1), choledocholithiasis (n=6) and biliary sludge (n=1). There were no postoperative complications related to the ERCP. Mean hospital stay was 2.2 days (range 2-3d).

Conclusion: In post-RNYGB patients with symptomatic choledocholithiasis or recurrent biliary pancreatitis, combining La-ERCP and cholecystectomy is a feasible and safe approach, with no complications in our series.

P.256 Feasibility of Endoscopic Implantation of Duodenal-Jejunal Bypass Liner Under Conscious Sedation

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Introduction: The endoscopically placed duodenal-jejunal bypass Liner (DJBL) has been designed to reduce type 2 diabetes mellitus and simultaneously achieve weight loss in morbidly obese patients. This study was performed to determine the safety, efficacy and feasibility of implanting the DJBL under conscious sedation. The primary endpoint was number of complications. Secondary endpoints were the implantation time (minutes) the amount of propofol (mg) used during the implantation and total hospital stay (hours).

Method: In this prospective study we compared placement of the DJBL in patients receiving propofol sedation with general anaesthesia. Fifty six patients were included with twenty eight patients in each group.

Results: Both groups were comparable with respect to age, gender, and BMI. All devices were successfully implanted and in both groups no complications occurred. Comparing the conscious sedation group with the general anaesthesia group showed a mean total operation time of 29 minutes and 56 minutes, mean propofol use of 170 mg and 258 mg, and mean hospital stay of 11 hours and 22 hours, respectively.

Conclusions: The implantation of the DJBL under conscious sedation seems feasible, safe and time- and cost efficient. Because of possible complications during the procedure, we recommend placement of the DJBL when receiving conscious sedation in the proximity of the operation room.

P.257 Improvement of Type 2 Diabetes after Implantation of a Duodenal-Jejunal Bypass Liner in Obese Patients

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Introduction: Endoscopic implantation of a Duodenal-Jejunal Bypass Liner (DJBL), or EndoBarrier, is a novel bariatric technique to induce weight loss and remission of type 2 diabetes (T2D).

Method: Twelve (7 male, 5 female) obese T2D subjects with a BMI ranging from 30 – 35 kg/m², and a fasting C-peptide > 1.0 nmol/L were selected for implantation of the DJBL. Fasting plasma levels of glucose, C-peptide, HbA1c and weight loss were analysed before and six months after DJBL implantation.

Results: Body weight decreased from 102 ± 3.2 to 93.7 ± 3.4 kg ($p < 0.0001$), BMI from 32.2 ± 0.5 kg/m² to 29.8 ± 0.7 kg/m² ($p < 0.0001$) and HbA1c decreased from 72 ± 4.6 to 61 ± 3.4 mmol/mol ($p < 0.05$), despite a 40% reduction in diabetes medication ($p < 0.05$).

Conclusions: Six months of DJBL implantation was associated with marked weight loss, and a significant improvement in glucose control. One-year results will follow.

P.258 Investigation into Changes in Gut Microbiota of Obesity in Children

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Introduction: Obesity is a complex pathological has been and continues to be an epidemic to progress. The human gut microbiota belongs predominantly to four bacterial phyla: the Gram negative Bacteroidetes and the Gram positive Firmicutes. However, the obesity in adult is associated with substantial changes in the composition of the intestinal microbiote consists of the relative abundance of these second phyla. However the situation is not clear about the microbial population of the intestine in the obese children.

Method: A total number of 52 children aged between 10 and 12 years (27 girls and 25 boys) were divided into groups: Obese (N=23) and non obese (N=29). IOTF references are used in order to define obesity. Anthropometric measurements were conducted and fecal sample were analysis for microflora composition in all children.

Results: a baseline anthropometric measures were significantly higher in obese group ($p < 0.05$). The microbiological analysis of fecal sample indicated, an increase in the ratio of Firmicutes/Bacteroidetes in the obese had a higher proportion of Firmicutes to Bacteroidetes (60% greater) than non obese group.

Conclusion: We suggested although is that Firmicutes produce more complete metabolism of a given energy source than do Bacteroidetes, thus promoting more efficient absorption of calories and subsequent weight gain. Further studies are needed to better define epithelial integrity in human obesity and its potential role in the microbiota.

P.259 What Happens After Gastric Band Removal Without Additional Bariatric Surgery

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Introduction: The Laparoscopic Adjustable Gastric Band (LAGB) is widely used for the treatment of morbid obesity but many patients experience complications. The treatment for complications is in many cases revisional bariatric surgery. Some patients request only band removal without secondary bariatric surgery. The objective of this study is to assess the perioperative and medium term outcomes of patients who got their LAGB removed without secondary bariatric surgery

Method: Patients were retrospectively selected using a prospectively collected database. The LAGB had to be in situ for at least one year and minimum postoperative follow up had to be 12 months.

Results: 38 Patients who got their LAGB laparoscopically removed between 2000 and 2010 were included. Median follow up after LAGB removal was 3.0 (1.4-8.9) years. In the 21 patients who did not underwent additional bariatric surgery median Excess Weight Loss (EWL) decreased from 41% (12/-100) at band removal to 9% (10/90), 0% (20/78) and 11% (12/56) after one, two and five years respectively. After a median of 2.1 (0.5/9.9) years, 17 patients underwent either a Roux-en-Y Gastric bypass (14 patients) or a Scopinaro (3 patients), all because of weight regain. Current EWL in these patients is 67% (24–113) compared to 11% (33–57) in patients without a secondary bariatric procedure ($p < 0.001$).

Conclusions: It is inadvisable to only remove the LAGB without performing an additional bariatric procedure when deemed technically feasible and safe. In this study not a single patient was able to maintain the weight loss achieved with the LAGB.

P.260 Effects of Sphygmomanometer Cuff Size on Obese Patients' Blood Pressures in Surgical Clinics

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Introduction: In individuals with obesity, circumference of arm increases as body mass index increase. Measuring the blood pressure of the obese people with standard sized cuff (12X22 cm) can lead to wrong results. In order to have accurate results, sphygmomanometer with appropriate cuff size should be used for the increased arm circumference. This study is planned to determine the effects of the sphygmomanometer cuff size of the on obese patients in surgical clinics.

Methods: This interventional clinical study's investigation set is patients who are hospitalized in the surgical clinics of a university hospital and have body mass index greater than or equal to 30. In the research, patients' blood pressures are measured by the same researcher with a standard sphygmomanometer cuff size and appropriate cuff size (16X30 cm, 16X36 cm, 16X42 cm) for the patients' arm circumference.

Results: In early findings of this ongoing research study it was determined that 80% of the patients were women, 40% of the patients' arm circumferences were 27–34 cm and 50% of the patients' arm circumferences were 35–44 cm. When blood pressure results from the standard sphygmomanometer and the sphygmomanometer with an appropriate cuff size for the patient were compared, measurements with standard sphygmomanometer were significantly high an average difference of 20.2±7.82 mmHg in systolic pressure and 8.3±10.27 mmHg in diastolic pressure were obtained.

Conclusion: Result of this research revealed that for an accurate blood pressure measurement in obese individuals, it was necessary to use a sphygmomanometer with appropriate cuff size.

P.261 The Relationship of Bradykinin B2 Receptor Gene Variation with Obesity, Hypertension and Lipid Variables in Obese Patients

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Introduction: Our aim was to examine the effects of C-58T genotypes over obesity, hypertension and lipid parameters in obese and non-obese patients.

Method: The study groups consisted of 108 obese and 80 non-obese subjects. Bradykinin gene C-58T genotypes were determined by PCR–RFLP.

Conclusion: In obese patients, the B₂R gene C-58T C/C genotype is considered to have a reduced response to diuretic drugs. We demonstrate that non-obese type 2 diabetic and cardiovascular disease patients with C/C genotype respond better to drugs such as oral antidiabetics and statin. In the non-obese group the increase in waist circumference and diastolic blood pressure in relation to homozygous polymorphic allele indicates that B₂R gene C-58T polymorphism may be associated with obesity.

P.262 Mechanical Ileus Following Spontaneous Deflating Intra-gastric Balloon: Two Cases

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Introduction: Intra-gastric balloon replacement for obesity treatment has been proven to be an efficient non-invasive therapeutic modality. One of the most severe complications of intra-gastric balloon replacement is spontaneous deflation and intestinal obstruction.

Method: In our clinic; until today we have performed 52 intra-gastric balloon replacements for obese patients, two of them (3.8%) spontaneously deflated in the sixth and tenth months, respectively. Both of the balloons were air-filled.

Results: *Fist case;* the first patient was 112 kg when the balloon was replaced; after the removal the patient was 89 kg. After the balloon replacement; these patients did not follow our routine clinical approach. Nine months after the procedure, he visited our hospital with intestinal obstruction symptoms. The X-ray revealed air-fluid levels. During a mini laparotomy the balloon was removed from 50 cm to the ileocecal valve. In the postoperative period there were no complications.

Second Case; the second patient was 90 kg before the procedure and 84 kg after the balloon was removed. After six months from the balloon replacement, the patient complained about the loss of satiety feeling, mild abdominal cramps and emesis appeared. Conservative treatment strategies failed and the patient was operated. The surgery was laparoscopic. Postoperative period was stable.

Conclusion: Intra-gastric balloon replacement is an effective non-invasive treatment strategy for obese patients. The risk of spontaneous deflation is increased with the delay of intra-gastric balloon removal and the balloon certainly must be removed at the end of the sixth month.

Results: B₂R gene C-58T frequencies for homozygous wild type (T/T), heterozygous (T/C) and homozygous polymorphic (C/C) genotypes for obese and non-obese patients were respectively as: 36.1%, 37.5%; 45.4%, 52.5% and 18.5%, 10%. In the obese group, the T-Chol (p=0.035) was found to be effected from variant allele with a decreasing effect, whereas increasing effect over waist circumference (p=0.016) and diastolic blood pressure (p=0.01) was observed in the non-obese subjects. Obese patients with C/C genotype were found to use diuretic drugs in lower frequency compared with T/T and T/C genotype (p=0.038). Non-obese patients with C/C genotype were found to use oral antidiabetic drugs (p= 0.045) and statin (p= 0.032) in higher frequency compared with T/T and T/C genotypes.

P.263 Role of Colonoscopy in the Workup of Bariatric Surgery Patients

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Introduction: Cancer is the most common cause of death in morbidly obese patients. Obese people have a well-documented increased risk of colon cancer. No guidelines are available for the workup of bariatric surgery patients in relation to colon cancer.

Methods: We perform screening colonoscopy at Bariatric & Metabolic Institute (BMI) Abu Dhabi to all patients above the age of 50 years (40 years if UAE nationals), have unexplained abdominal symptoms, anemia of unknown reason, family or personal history of colonic pathology.

We retrospectively reviewed charts of all the patients who had colonoscopy during the period from Jan 2009 – Jan 2013. Patients were divided into two groups; group A) patients BMI> 30. Group B) patients BMI< 30. We compared the groups demographics and the prevalence of polyps and cancer.

Results: Three hundred and forty one colonoscopies were done during the study period. One hundred thirty seven were for patients with BMI> 30; mean age 44 years, and 204 for people with BMI>30; mean age 46 years. The overall prevalence of adenomatous polyps and cancer was 6.74 % and 1.75%. Further analysis showed that the prevalence of adenomatous polyps and cancer was 12.4% and 2.1% for group A, while it was 2.9% and 0.9% for group B.

Conclusion: The risk of developing colonic adenomatous polyps and cancer is high in young obese people in this part of the world. Guidelines are needed to establish criteria for screening in this group of patients.

P.264 BMI-EWL Trends, Short and Long Term Slippages in 154 Patients Operated with the New-HAGA (Heliogast System) LAGB for Morbid Obesity According to Four Different Techniques. Results at 48 Months in a Prospective Randomized Study

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Background: LAGB is a safe and effective procedure for the management of morbid obesity. A standardization of the surgical technique could be important in order to reduce the incidence of surgical related complications.

Methods: We included in our study 154 consecutive patients operated with the new-HAGA (Heliogast System) LAGB for morbid obesity between September 2008 and Mars 2009. Patients enrolled were randomly assigned to four groups according to the different surgical technique. The groups were homogenous for age and BMI. Four groups were: 1-"pars flaccida technique" with anterior fixation; 2-"pars flaccida technique" without anterior fixation; 3-"two-step perigastric technique" with anterior fixation; 4-"two-step perigastric technique" without anterior fixation.. The patients rested in follow-up at December 2012 are 120 and the parameters checked in all the four groups were: BMI and EWL trends, intra-operative complications, short and long term slippages. Statistical analysis has been done with the T Student test.

Results: Mean age of the 154 operated patients (27:127 = M: F) was 38.7 M (18–53) and 40.3 F (16–66), (International HAGA results: 39.3 M (16–68) and 41.2 F (16–66)). Mean BMI was 44.6 M and 42.1 F (international results: 43.2 M and 42.9 F). Mean BMI evaluation at 12 months for 147 pts. (Out of 154 operated pts.) were 34.3 M and 31.3 F (International HAGA results: 33.8 M and 32.6 F). Mean BMI evaluation at 18 months for 147 out of 154 operated patients was 31.6 M and 29.7 F (International HAGA results: 34.6 M and 30.5 F). Mean BMI evaluation at 24 months for 132 out of 154 operated patients was 30.7 M and 29.2 F (International HAGA results (1): 32.5 M and 29.8 F). Mean BMI evaluation at 36 months for 128 out of 154 operated patients was 30.6 M and 28.8 F (International HAGA results: 32.4 M and 29.6 F). Mean BMI evaluation at 48 months for 120 out of 154 operated patients was 30.4 M and 28.9 F (International HAGA results: 32.5 M and 29.5 F). Mean EWL evaluation at 12 months for 147 out of 154 operated patients was 41.6 M and 46.9 F (International HAGA results: 42.1 M and 45.6 F). Mean EWL evaluation at 24 months for 132 out of 154 operated patients was 49.8 M and 54.7 F (International HAGA results: 49.1 M and 53.9 F). Mean EWL evaluation at

36 months for 128 out of 154 operated patients was 49.7 M and 54.9 F (International HAGA results: 49.1 M and 53.9 F). Mean EWL evaluation at 48 months for 120 out of 154 operated patients was 49.6 M and 53.9 F (International HAGA results: 49.0 M and 53.8 F). Among the 154 patients we analyzed neither intraoperative nor short-term complications happened. In the group of patients examined at 24 months (December 2010) we found four slippages in 3 women and 1 man. At 36 months we found other 3 slippages, without anterior fixation and 1 slippage with anterior fixation. At 48 months (December 2012) we found other 2 new slippages, all without anterior fixation and pars flaccida technique.

Conclusion: In our study the new-HAGA LAGB for morbid obesity is a safe and well reproducible procedure for all the four different techniques we used. In all groups we found an efficacy in the BMI and EWL trends at 36 months. Our results were similar or even better than the International HAGA results. Total number of slippages at 48 months is 10: 9 slippages without anterior fixation. We performed 7 re-banding and 3 removals. A longer follow-up will give us the chance to evaluate an eventual increase of the incidence of complications in one or more of the studied groups. An implementation of the sample of course is necessary to appreciate statistically significant differences among the four groups. From March 2009 to December 2012 we performed 1139 new-HAGA LAGB: pars-flaccida a technique with anterior fixation in 1078 patients and two-steps perigastric technique with anterior fixation in 51 pts. We observed 4 slippages (3 pars-flaccida technique). We think better the anterior fixation of the new-HAGA LAGB.

P.265 Liver Steatosis Evaluated By MRI Studies after Preoperative Workup with Bariamed Treatment in Severely Obese Patients

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Introduction: Hepatic steatosis is an excessive accumulation of fat in the liver. The hepatomegaly caused by steatosis could represent one of the main technical challenges in bariatric surgery. The aim of this prospective study was to analyze by MRI studies the efficiency on hepatic steatosis of the caloric restriction associated with Bariamed treatment (medical nutrition product) in a population of morbid obese patients in the preoperative period.

Methods: Between June 2012-January 2013, 25 patients in the preoperative workup were included in this prospective monocentric study. The inclusion criteria were represented by: age 18–70 years, body mass index >35 kg/m²; suspicion of hepatic steatosis (modified liver functional tests). Each patient received dietary counseling information and inclusion of an abdominal MRI and a biological assessment repeated after 6 weeks of treatment.

Results: 20 women and 5 men with a mean age 41 (range=18-65) were included in our study. The mean BMI was 42.53 kg/m²(range=35-50) and waist circumference 131 cm (range=107-155). The average number of days of treatment was 32 days (range=2-42days) The evolution of weight loss and waist circumference were 2.8 kg and respectively 4.42 cm. The quantification of hepatic steatosis by MRI study found a significant difference ($p=0.000059$) with a mean liver density from 26.076 (7.32-45.81) to 22.67 (6.65-41,53). The analysis of the liver volume revealed a shrinkage by an average of 4.69%($p=0.0047$)

Conclusion: The use of Bariamed in addition to a caloric restriction can significantly reduce liver steatosis and volume. More comparative studies are expected to confirm these results.

P.266 Multi-Criteria Decision Analysis Model for Assessing Risks of Alternative Bariatric Procedures

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Introduction Development the risk-based model for surgical decisions in controversial situations is difficult. Our goal was to develop real-time decision support system that can be used before or during medical intervention for bariatric surgery.

Method: To accomplish this goal, we will build a Multi-Criteria Decision Analysis (MCDA) to provide a ranked list of medical interventions based on their overall value.

Task 1. Interview Surgeons and Medical Professionals to find criteria and metrics they use in making decision in controversial situations during bariatric surgery

Task 2. Develop library of alternative actions they can use in controversial situations

Task 3. Find evidence-based information on performance of alternatives in bariatric surgery and quantify this performance based on system of criteria and metrics developed in Task 1

Task 4. If evidence-based information is missing for some criteria and metrics, use the best professional judgment to assess performance of alternative treatments.

Task 5. Elicit value judgment from surgeons and medical professionals on relative importance of the criteria in their decision making process

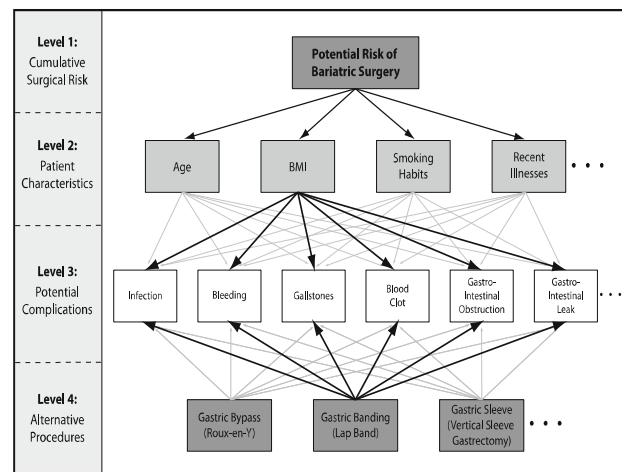
Task 6. Develop scenarios for different patient values on quality of life to be used in populating decision model

Task 7. Integrate methodology and data developed in Tasks 1 through 6 into software platform. Only feasibility study is proposed; commercial software will be developed upon successful validation of this effort

Results: The four-leveled decision model pictured in **Figure 1** is a representation of how MCDA might be applied to evaluate the potential risks of complications for different bariatric surgeries.

Conclusion: Used in conjunction, MCDA decision models and algorithms provide a transparent, systematic, and comprehensive approach to decision making.

Figure 1. Example MCDA decision model for assessing risks of alternative bariatric procedures



P.267 Alcohol Consumption Before and After Gastric Bypass (GBP)

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Background: Problems with alcohol-related disease have been reported after Gastric bypass (GBP). It is not known whether this is a function of increased intake, altered metabolism, other factors or a combination.

Patients and Methods: Consecutive patients were followed for one year. Phosphatidylethanol (PEth) values were determined before first visit and after one year. PEth is an alcohol marker with high specificity and correlates to alcohol consumption. A value below a decision-reporting limit of 0.10 mol/L indicates low alcohol consumption.

Results: Complete data sets were obtained for 127 patients (149 initially tested) and compared with values from a matched group of 302 healthy blood donors. The study group consisted of 79 women and 48 men. Mean body weight decreased from 127 to 93 kg. For all patients, PEth values did not change from pre- to postoperative measurements ($p=0.09$) and were lower than values from blood donors on both occasions ($p<0.005$). In the study group values were < 0.10 mol/L in 83 % preoperatively and 79 % postoperatively. In the group of blood donors only 57 % of values were < 0.10 mol/L.

Comments: According to PEth-values, alcohol consumption in the patient group seems to be lower than in the reference group consisting of healthy blood donors. Furthermore there is no statistically significant difference in PEth-values pre- and postoperatively indicating that no significant change in alcohol consumption has occurred. Confounding factors might be change in body weight and differences in alcohol absorption and metabolism pre-and postoperatively. Long-term follow-up is planned.

P.268 Sleeve Gastrectomy and Gastric Plication. Comparison of Two Restrictive Bariatric Procedures

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Vertical gastric plication (LGCP) is the evolution of less invasive sleeve gastrectomy (LSG). It determines a gastric restriction folding and suturing the greater curvature: it has a 80% reduction of gastric capacity. The technique of Talebpour, an Iranian surgeon is being validated by scientific societies. We compared the results and complications of gastric plication with the sleeve gastrectomy.

Materials and Methods: After approval of the Institutional Ethics Committee, we have achieved 50 gastric plication and 50 sleeve gastrectomy in two years (2010–2011) with the same technique and the same surgeon, plus follow-up. The inclusion criteria are SICOB; 44 women and 6 men for LGCP and 40 men and 10 women for LSG (average age is 32.5 years, the mean BMI is 41 kg/m² (LGCP) and 43kg /m² (LSG)).

Technique: Dissection of angle of His, liberation of the greater gastric curvature with a radio frequency or harmonic scalpel. Enfolding of the gastric wall performed on the greater curvature (comprising body and antrum) and performing a double row of extramucosal sutures from top to bottom. A bougie 32-FR or a gastrocope is usually placed by the anesthesia team into the lumen of the stomach.

The technique of the sleeve gastrectomy was described by Gagner: it consists in reducing the stomach into a vertical tube with a volume of about 100ml or less achieved through resection of the greater curvature following a line parallel to the lesser curvature using a linear stapler. A bougie of caliber 32ch is usually placed by the anesthesia team into the lumen of the stomach along the lesser curvature. A test with methylene blue is used for controlling the sealing of the suture line. For both techniques radiological control in day 1 and discharge on day 2 for LGPC and day 5 for LSG with a liquid diet. Nutrition is free from the 6th week. Monitoring visits are after 1,3,6,12,18 and 24 months. Endoscopic controls are done after 6, 12 and 24 months.

Results: All the laparoscopic procedures were performed without conversion. The mean operative time was 45 minutes for LGPC and 50 minutes for the LSG. The average stay was 3 days for LGPC and 5 days for the LSG.

Performance of % EWL: For the 1st month LGPG-17%, 3 months-28%, 6 months-50%, 9 months-55%, 12 months-62% For the 1st month SLG-22%, 3 months, 31%, 6 months-41%, 9 months-57%, 12 months-68%.

Complications: For the LGCP: Nausea and vomiting in 20%, resolved in two weeks. A micro perforation and a stenosis of the gastric antrum (second case) due to surgical error. One psychopathological case with recovery of the weight (converted to LSG) to date. Mild esophagitis in two patients. After six months no injury. Lumen size in a year without expansion. For the first LGCP leaks, corrected on the first day with suture and drainage, 4 cases of GERD.

Conclusions: The gastric plication has the lowest rate of early complications among all bariatric procedures. Adverse events were related to the lack of technique and experience. The endoscopic controls demonstrate that the fold parietal slowly decreases to the initial resolution of the edema, the radiological results also revealed no significant dilation of LGCP after six months. The %EWL has achieved a satisfactory 62% after 12 months, compared to other restrictive methods, but the EWL appears rapidly without major complications later. This technique needs more case studies and time to be evaluated, even though the first experiences of Talebpour after 12 years are encouraging.

P.269 Novel, Non-Invasive, Swallable Device for Weight Loss in Overweight and Light Obese Patients. Results of the European Obalon Study Group Early Experience

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Introduction: Use of intragastric balloons as co-adjutant in dietetic regimens, to prevent obesity complications and surgical risks was largely described, although symptoms, endoscopic placement and anaesthesia limited the utilization of these devices. Aim of this study is to evaluate the safety and efficacy of a new, less non-invasive, intragastric balloon.

Methods: The Obalon Gastric Balloons (OGB) (ObalonTherapeutics, Inc., San Diego, Ca.) were administrated from July to November 2012, in 110 patients (82 and 28), mean age:42.2±12.2, mean initial BMI 33.1±5.5 Kg/m², mean initial weight:93.7±20.6 kg, in 11 European bariatric centers. All the OGBs were swallowed, X-ray checked and then remotely inflated with 250cc nitrogen, without endoscopy or anesthesia. Additional balloons were added according to weight loss and patients compliance. After the three-month treatment period, all balloons were retrieved during an upper endoscopy, under no or conscious sedation. Patient data were analyzed for adverse events and standard weight loss parameters. Data are expressed as mean±SD.

Results: Device related mortality and complication were absent. Mean positioning and removal time were <5 and <10 minutes respectively. 57(51.8%) and 6(5.4%) patients received a second and a third balloon between 2 and 11

weeks after first placement. At OGB removal mean Weight Loss was 8 ± 5.8 Kg, mean EWL was $50.2\pm 72.5\%$, mean BMI loss was 2.8 ± 1.9 kg/m². Light nausea/vomiting were reported in <10% of patients and resolved within 24 hours with no additional clinical visits.

Conclusion: Early results with the Obalon in European overweight and light-obese patients support favorable safety, tolerability and weight loss during a 3-month treatment.

P.270 Two-Step Conversion of Failed Laparoscopic Gastric Banding to Laparoscopic Gastric By-Pass

PRESENTER: S.Carandina¹

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Introduction: Laparoscopic adjustable gastric banding (LAGB) has become the most popular restrictive procedure in Europe but revisional surgery for LAGB failures or complications is required in 20-30% of cases. The purpose of this study was to analyze the outcome of 2-stage procedure for LAGB conversion to LRYGB, with special regard to indications for re-do surgery and complications rate.

Methods: The bariatric database of our institution was reviewed to identify patients who had undergone conversion of LAGB to LRYGB, from January 2008 to September 2012.

Results: Seventy-four patients were included. Of these, 55 (75.6%) required conversion to LRYGB for inadequate weight loss or weight regain and 19 for band-related complications. All the procedures were performed in two-stage and laparoscopically. The average time between LAGB insertion and LRYGB was 82.5 months (range 27–208). The mean follow-up after LRYGB was 29.15 ± 17.92 months (range 6–64). Early major complications occurred in 8.1 %. The mean BMI prior LAGB and prior LRYGB conversion was 45.63 ± 6.28 kg/m² and 45.61 ± 5.69 , respectively. The average %EWL at 24 months and 48 months after conversion was 70.29% and 67.34 % respectively. Between patients operated for inadequate weight loss and patients operated for band-related complications a significant difference in average BMI at 24 months, was found (32.19 kg/m² vs 29.49 kg/m², $p=0.025$). This difference is lost at 48 months follow-up.

Conclusion: LAGB has a considerable failure and complications rate. Laparoscopic conversion of gastric banding to Roux-en-Y gastric bypass is feasible and safe and allows patients substantial additional weight loss.

P.271 Revisional Surgery After Failed Laparoscopic Adjustable Gastric Banding. Comparison Between Roux-en-Y Gastric Bypass and Gastric Sleeve

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¹Jean Verdier Hospital, Paris XIII University-University Hospitals of Paris Seine Saint-Denis. Department of Digestive and Metabolic Surgery Paris-France

Introduction: Despite its worldwide popularity, laparoscopic adjustable gastric banding (LAGB) requires revisional surgery for failures or complications in 20-30% of cases. The purpose of this study was to compare the outcome for LAGB conversion to laparoscopic Roux-en-Y Gastric Bypass (LRYGB) and Gastric Sleeve (LGS).

Methods: The bariatric database of our institution was reviewed to identify patients who had undergone conversion of LAGB to LRYGB or to LGS, from January 2008 to September 2012.

Results: One hundred and eight patients were included. Of these, 74 (68.5%) underwent conversion to LRYGB and 34 to LGS. Indications for re-do surgery were inadequate weight loss or weight regain in 75 patients and band-related complications in 33. All the procedures were performed in two-stage and

laparoscopically. The mean follow-up after LRYGB was 29.15 ± 17.92 months while after LGS was 24.29 ± 14.31 months. The mean BMI prior LRYGB and LGS was 45.61 ± 5.69 and 47.58 ± 7.82 , respectively. Early major complications occurred in 8.1 % of patients in LRYGB group and in 5.8 % of LGS group, without significant differences. The average %EWL at 24 months and 36 months after conversion was, in the LRYGB group, 70.29% and 68.39 % respectively while in LGS group was 65.54%. and 59.93%.

Conclusion: LAGB has a considerable failure and complications rate. Revision of failed LAGB to LRYGB has already been accepted as safe and effective salvage therapy. Our experience has shown that also conversion to LGS is safe and allows patients substantial additional weight loss.

P.272 The Effects of Short-Term Preoperative Very Low Calorie Diet (VLCD) on Long-Term Outcomes After Laparoscopic Roux-en-Y Gastric Bypass for Morbid Obesity

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Introduction: A14-day VLCD regimen before laparoscopic Roux-en-Y gastric bypass (LRYGB) effectively reduces patients' weight, perceived difficulty of procedure by operating surgeons, and perioperative complication rates. However, little is known about the long term outcomes of this clinical routine.

Methods and patients: In an international multicenter setting, patients undergoing LRYGB were randomized to two weeks preoperative VLCD (800 kcal/d Optifast 800) or no dietary restriction (ND). The outcomes were evaluated in 3 of 5 participating centres (42% of patients) 4 weeks after surgery and during the 3rd year after LRYGB.

Results: Initially 59 patients were allocated to VLCD and 68 to ND. There were no differences (VLCDvsND) regarding gender (46vs38 females), age (40 ± 9 vs 42 ± 11 years), BMI (44.5 ± 6 vs 45.5 ± 9 kg/m²) or co-morbidities (62vs59%). Mean weight change during the 2 weeks before the procedure was 3.9 ± 3.6 kg in VLCD and 0.9 ± 3.2 kg in ND ($p=0.01$) with no difference in BMI. On the 4th postoperative week in all 127 patients mean weight loss was 11.6 ± 7.9 kg, and BMI remained significantly lower in VLCD group (39.3 ± 9 vs 42.4 ± 7 kg/m², $p=0.035$). After 28±11 months mean weight loss in all patients evaluated ($n=83$ [65%]) was 29.2 ± 14.4 kg with no statistical differences in terms of BMI (31.1 ± 5 vs $31.8.4\pm 5$ kg/m²) or prevalence of co-morbidities (20%vs28%).

Conclusions: A14-day VLCD regimen is effective in reducing weight prior to LRYGB for morbid obesity and helps maintaining lower BMI within first weeks after surgery. However, this routine has little or no effect on long-term outcomes of bariatric surgery, such as weight loss and obesity related co-morbidities.

P.273 Effect of the Ketogenic Diet in Preoperative Weight Loss, Reduction of Visceral Fat, the Liver Volume and Outcome After Bariatric Surgery

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Introduction: Bariatric surgery is considered the only therapeutic option for morbid obesity when medical approaches fail. The obese have a higher incidence of complications during surgery and in the immediate post-operative phase. In particular, there is evidence that the surgical procedure

is technically more difficult by the presence of hepatomegaly and the high degree of visceral fat. The main objective of the study is to determine whether weight loss pre-operatively with ketogenic diet simplifies LRYGBP and Sleeve Gastrectomy, reduces operative time, potential intra-operative complications and hospital stay. Secondary objectives are to assess the efficacy of the ketogenic diet vs. low-calorie diet balanced in terms of weight reduction, biochemical indices of nutritional status, liver volume, degree of visceral fat, adherence to dietary treatment proposed level of satiety.

Materials and Methods: The study is prospective case–control study. We included in the study 40 patients divided into two groups of 20 with a BMI of 40/60 (kg / m²) pertaining to the Centre for the Treatment of Obesity in the Hospital of Pineta Grande Castel Volturno (CE). All patients are subjected to a path of personalized nutritional education; group will follow a ketogenic diet for a period of 21 days pre-surgery and the control group hypocaloric diet balanced by 1000/1200 kcal. Preoperative weight loss is correlated with sex, age, weight and BMI, PA, neck circumference, eco abdomen to measure the thickness of the right and left hepatic lobes, visceral fat and grading of fatty liver, blood chemistry parameters. The patients underwent the surgical procedure by a single surgeon who, according to his personal experience, make a subjective evaluation of the complexity of the intervention (exposure and operative time, bleeding, difficulty dissection and reconstruction), ease of access to the gastro-esophageal junction -esophageal and the ability to adequately portray the left lobe of the liver. We evaluate any major complications defined as any adverse event: a re-operation, blood transfusion, evaluation of the content of abdominal drainage, prolongation of hospitalization for more than 5 days and so on.

Preliminary results: Weight loss resulting from the ketogenic diet is directly proportional to the initial BMI ($r = 0,512$, $p = 0.001$) and not to other characteristics studied (gender, age, height and weight) and higher than the low-calorie diet balanced. With regard to the surgical evaluation, it has put in evidence, so far, a considerable ease of access to the gastro-esophageal junction for the reduced volume of the left lobe of the liver and of fat peri esophageal. Also in the bypass reduces the thickness of the omental fat and mesenteric contributes to a smooth performing the anastomosis jejunoileal and transposition within sottocardiale jejunal loop. There was evidence of a less fragile and bleeding visceral fat compared to the previous experience of the surgeon.

Conclusions: Analysis of the data shows that the surgical procedure appears to be considerably facilitated by the weight loss preoperative and specifically from that linked to the ketogenic diet. The ketogenic diets compared to low-calorie diets balanced in the short term are more effective because they produce a greater and more rapid weight loss, with an appropriate level of satiety, increased adhesion of patient and contribute to a reduced loss of lean body mass.

P.274 Complications After Bariatric Surgery. Application of Demaria's Score to Stage the Procedure

PRESENTER: E. Sánchez¹

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Introduction: DeMaria risk score stratifies patients submitted to bariatric surgery into three groups based in the BMI, age, hypertension, gender and probability of developing pulmonary embolism. Patients with an estimated high risk of complications should be submitted to less aggressive operations or staged surgery.

Aim: To validate DeMaria's score in our setting and to analyze if high risk patients can be safely submitted to a staged procedure commencing with a sleeve gastrectomy.

Patients and method: 525 patients operated between 2000 and 2011 were included. Mean age was 44 years and mean BMI was 45.5. DeMaria's score A-C was calculated including the aforementioned parameters;

major postoperative complications were bleeding, leakage, pulmonary embolism, and severe infections requiring ICU admission.

Results: Only hypertension was significantly related to postoperative complications, though a BMI over 50 was almost related to a higher complication rate ($p = 0.06$). The overall complication rate was 20.4% for patients in group A, 26.8% for patients in group B and 37.8% for patients in group C, $p = 0.04$. We selected patients in groups B and C and calculated the major complication rate attending to the kind of surgical procedure performed, gastric bypass, biliopancreatic diversion and sleeve gastrectomy. Major complications presented in 10% of patients after gastric bypass, 10.1% after BPD and in 4.1% after sleeve gastrectomy, $p = 0.07$.

Conclusion: In our population it is advisable to stage the bariatric surgical procedure for patients with more than 2 DeMaria's criteria (score C, D), starting with a sleeve gastrectomy.

P.275 The Role of Liquids in Dietary Recommendations After Gastric Bypass (GBP)

PRESENTER: J. Hedenbro²

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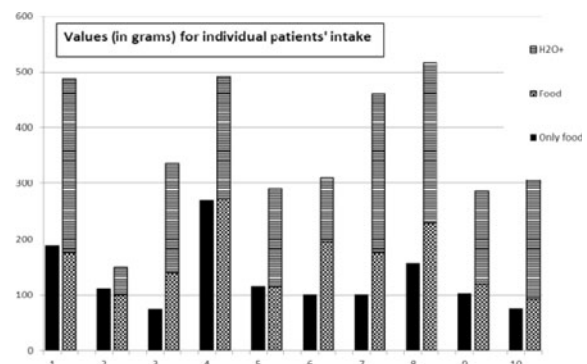
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Background: Modern patients look for information on the Internet. They are met by very different recommendations on postoperative diet, in particular about drinking during meals. A reason for this variability may be a lack of hard evidence. We studied whether advice given by Swedish centres was uniform, and whether drinking during a meal influenced caloric consumption.

Method 1: All 40 departments in the national Scandinavian Obesity surgery (SOReg) were sent standardized questionnaires to obtain information how dieticians and surgeons advised patients on postoperative diet.

Method 2: Ten patients with a laparoscopic GBP 4–5 weeks earlier were invited have lunch on two separate days during a 7-day period. We served a bowl of Swedish hash-browns (500 g portion), with or without liquids (plain water) in a randomised order. Meal and water weight was measured before and after. Instruction was to eat to full satiety. Hunger/satiety scores were obtained using 100 mm visual analogue scales.



Results 1 Questionnaire: Response rate for surgeons was 32%, for dieticians 75%. Consensus was not found for liquid intake during meals; only 69% of surgeons advised patients to avoid or minimise but 97% of dieticians.

Results 2 Test meals: All patients ate to full satiety. 8/10 patients consumed more solid food when they were allowed water to drink; the mean increase in caloric consumption was 32% (range 9 to + 95) (fig).

Conclusion: Available data indicate that patients should refrain from drinking during a meal. This information needs to be widely known also among surgeons.

P.276 Metabolic Surgery for Type 2 Diabetes and Obesity

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Obesity has become a pandemic all over the world and Type 2 Diabetes Mellitus induced by obesity is on the rise. The profound effect of bariatric surgery on both is well known and bariatric surgery now is considered as a treatment for these 2 conditions. Bariatric surgery also is considered for BMI 30–35 for patient suffering from Type 2 diabetes.

Review of the literature comparing the result of different bariatric surgery procedures is being well known. Our results of 816 bariatric surgeries over 8 years, out of which almost 600 Biliopancreatic Diversion will be presented. It will show that Biliopancreatic Diversion achieve 95% loss of weight and more than 98% amelioration of diabetes. Weight loss is greatest after Scopinaro's Biliopancreatic Diversion sustained for 8 years and more and the effect on resolution of diabetes is more pronounced than after bypass.

Scopinaro's Biliopancreatic is superior to gastric bypass in the resolution of both obesity and type 2 diabetes mellitus.

P.277 Revision of Failed LAGB to BPD SCOPINARO

PRESENTER: M. Gari¹

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Introduction: Malabsorptive Bariatric surgery (BPD) is very effective as primary and secondary procedure. We evaluate the possibility, outcome and safety of revision of failed LAGB to BPD.

Method: From August 2008 until October 2012, 31 patients of failed LAGB were revised to BPD. Retrospective data collected, comparing weight loss in those patients before and after BPD and early complications (leak and bleeding). In our institute we started Bariatric Surgery in 2005 with total of 840 bariatric procedures were done.

Procedure includes one stage removal of previous band and standard Scopinaro (stomach pouch 350-400ml, alimentary limb 250cm, common limb 50cm) laparoscopically.

Result: 31 cases (8 males, 23 females), age range from 18 to 59 were BPD done 1 year to 10 years post LAGB. BMI range from 39 to 64. Follow up BMI post BPD at 6, 12, 18, 24, 36, 48 and 54 months were 48.7, 35.4, 34.8, 34, 33.7, 32 and 30 respectively. There is no mortality neither leak. One case had stapler line bleeding treated conservatively. One case converted to open due to extensive adhesions from the previous laparotomy for banding.

Conclusion: Revision of LAGB to BPD is safe, effective in weight loss as a secondary one stage bariatric procedure.

P.278 Incidence of Late Surgical & Nutritional Complications Following Primary Single-Stage Laparoscopic Duodenal Switch (LDS)

PRESENTER: S. Nachimuthu¹

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Background: LDS carries a risk of long-term complications yet currently NHS funding for specialist follow-up ceases after 2 years. We report the incidence of surgical and nutritional complications requiring intervention that occur more than 2 years after primary single-stage LDS.

Methods: Prospectively maintained database was analysed retrospectively for patients who underwent single-stage DS between January 2003 and December 2010.

Results: 117 patients. In-hospital mortality rate 0%. Two year follow-up rate was 71% (83/117) and beyond 2yrs 66% (55/83). Mean pre-op BMI =55 [range

35–78] and weight=156kg [range 97-231kg]. Mean %EWL at 12, 24, 36, 48 and 60 months = 79%, 91%, 92%, 90% and 93% respectively.

	Within 2 years (n=83)	Beyond 2 years (n=55)
Surgical complications	6%	13%
Vitamin D deficiency	45%	42%
Vitamin A deficiency	11%	11%
Vitamin B12 deficiency	12%	4%
Folate deficiency	49%	7%
Zinc deficiency	51%	2%
Iron deficiency	22%	5%
Albumen <35 g/dl	10%	2%

Conclusion: Laparoscopic DS causes excellent sustained weight loss. However, vitamin and mineral deficiencies are common and up to 10% can develop at least a mild degree of hypoalbuminaemia. Most deficiencies occur and are corrected within 2 years of surgery, but 42% of patients continue to require close management of vitamin D deficiency long-term and 13% of those beyond the two year NHS funded follow-up cut-off go on to develop surgical complications, the diagnosis of which might be missed or delayed without on-going specialist bariatric surgical input.

P.279 Outcome of Primary Single-Stage Laparoscopic Duodenal Switch (DS) In the Super-Morbid Obese Patient

PRESENTER: S. Nachimuthu¹

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Background: Unlike RYGB, DS is said to produce excellent weight loss even in the super-morbid obese (BMI >60). We report our experience.

Methods: Prospectively collected data of patients who underwent primary **single-stage** DS using a standard technique between January 2003 and December 2010 was analysed retrospectively in terms of % excess weight loss (EWL) and the incidence of surgical complications and nutritional deficiency states for patients below and above BMI 60. **Results:** Total numbers of patients were 117 (BMI >60: 30 cases and BMI <60: 87 cases). The mean EWL at 12, 24 and 36 months for BMI >60 group are 71.4, 86, and 86.9 respectively. The mean EWL at 12, 24 and 36 months for BMI <60 group are 81.6, 92.1 and 92.8. The incidence of most vitamin and mineral deficiencies that occurred post-op was similar in the two groups, although the super-morbidly obese were more prone to folate (50% vs 34%), iron (27% vs 16%) and zinc (47% vs 33%) deficiencies. A BMI >60 was not associated with an increased risk of surgical complications ((13% vs 9%, NS).

Conclusion: Laparoscopic DS can be safely carried out as a single-stage procedure in patients with a BMI >60. Whilst weight loss following DS in the super-morbid obese was substantially greater than that reported in patients with a BMI >60 undergoing RYGB (86% EWL at 2 years compared to typically <65% EWL), weight loss in DS patients who were not super-morbidly obese were even better (92% EWL at 2 years).

P.280 Revision of Single-Anastomosis Duodeno-Ileal Bypass With Sleeve Gastrectomy (SADI-S) for Undernutrition. Technical Options

PRESENTER: E. Arrue¹

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Introduction: Single-anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S) is a simplification of the duodenal switch performed with a one-

loop duodeno-ileostomy at 200–250 cm from the cecum. As a malabsorptive operation it gets overall good results with a risk of malnutrition when the patient is not complaint with the follow up.

Aim: To analyse the revisional experience on SADI-S, the technique performed and the short term results.

Patients and method: 125 patients were submitted to SADI-S as a one step operation in the last 6 years. 6 patients were reoperated due to recurrent hypoproteinemia. Associate conditions influencing undernutrition were myelodysplasia and schizophrenia in one case each. One patient was an unknown homeless.

Results: In three cases the operation was converted into a Roux-en-Y duodenal switch by section of the efferent loop and anastomosing it 1 to 2 meters into the afferent one. In two cases the new operation was a new SADI-S upstream after dismantling the previous anastomosis and performing a new one, end-to-side, hand-sewn. In one case a duodeno-duodenostomy was performed, leaving only the sleeve. In one case re-sleeve was added to the procedure. One patient was readmitted once for hypoproteinemia.

Conclusion: Different technical possibilities are presented to convert a failed malabsorptive operation. However, the best option is to select adequately the patient submitted to aggressive bariatric surgery.

P.281 Subserous Band Placement A Step Beyond Pars Flaccida Technique?

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Background: The development of pars flaccida technique resulted in almost total disappearance of such problem as a posterior slippage; while anterior slippage remains a frequent complication, no matter if suturing or non-suturing of a band is used (up to 8%). To reduce the rate of anterior slippage, we developed the combination of pars flaccida technique and an anterior subserous band placement.

Methods: The subserous band placement was used in 469 patients of both sexes and a wide range of BMI (30–75). The first procedure was done in October 2010. Four models of gastric band were used (Lapband, Swedish band, Bioring and Medsil band).

The initial part of operation was performed according to pars flaccida technique. The band was placed into retrogastric channel. Then the needleholder dissected the peritoneum of the anterior esophagus from right to left to the His angle, where it grasped the tubing of the band and pulled it around the esophagus. Then the band was locked as usual. No intraabdominal sutures were applied during the procedure.

Results: The technique resulted in a great facilitation of band placement and reduction of operative time in comparison to suturing technique (from 40 to 20 minutes). There were no complications connected with the studied technique. This group of patients developed no slippages for 3 years.

Conclusions: The proposed technique is very simple and easily feasible in all BMI categories of patients with obesity. This method can potentially eliminate band slippage and should be further evaluated.

P.282 Is There A Relation between Number of Adjustments and Results after Gastric Banding?

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Background: Laparoscopic adjustable gastric banding (LAGB) is a standard restrictive bariatric procedure. Previous studies have shown that patients lost to follow up do worse than patients who remain in follow up. However, it is not known if this is purely because of a lack of band adjustments.

Methods: Patients who underwent primary LAGB from October 2006 until March 2009 were included. The following parameters were collected: demographic characteristics, pre- and postoperative weight, pre- and postoperative status of comorbidities, type of band, short and long term complications, re-operations, date, number and volume of adjustments, total amount of inserted volume and last measured volume.

Results: 174 patients underwent primary LAGB. Twelve patients did not attend follow up visits after 24 months (8.1%). Mean follow up was 46 months and excess weight loss (%EWL) 47%. Eleven patients (8.1%) developed long term complications while 12 patients (8.8%) underwent revisional surgery. Patients underwent a mean number of five adjustments with a range of 0 to 18. The mean volume of totally inserted millilitres (ml) was 8 ml with a range of 0 ml to 14 ml. There was a strong positive relation between number of adjustments and weight loss as well as reduction in obesity-related comorbidities ($r = 0.22$, $P < 0.01$). There was no significant relation between number of adjustments and complications or revisional surgery.

Conclusion: There is a strong relation between number of band adjustments and weight loss while complications and re-operations seem to be independent of the number of adjustments.

A continuous and lifelong follow up of LAGB patients is necessary, including regular band volume adjustments.

P.283 Post-Operative Care and Efficacy of Laparoscopic Adjustable Gastric Banding in a Regional Australian Obesity Centre

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Introduction: Laparoscopic adjustable gastric banding is an established option for weight loss. Its efficacy relies on the post-operative follow-up appointments for band adjustments. This study aims to investigate the relationship of weight loss and the number of follow-up appointments attended.

Method: A review of prospective single-centred database was performed. LAGB patients in time period 2007–11 was included. Age, sex, body mass index (BMI) and percentage excess weight loss (%EWL) were measured in a two year follow-up period.

Result: n=136 patients were identified; 20 males and 116 females.

Mean pre-op BMI was 42.9 ± 1.1 Mean post-op BMI in year one was 34.1 ± 1.0 and in year two was 34.6 ± 1.2 .

Mean %EWL was 46.4 ± 3.3 and mean number of follow-up attended was 11.3 ± 0.7 appointments in year one. In year two mean %EWL was 49.1 ± 4.3 and mean follow-up attended was 5.5 ± 0.7

There is a correlation between %EWL and no. of follow-up attended in the first year ($r=0.24$, $p<0.01$).

No correlation between in %EWL and no. of follow-up attended in year 2 ($r=0.12$, $p=0.15$)

Female patients attended 2.9 ± 2.0 more follow-up appointments than males (independent t-test, $p<0.01$).

There is no significant difference of %EWL between males and females ($p>0.05$).

There was no correlation between age group and number of clinic appointments attended.

There was no significant difference between age group and %EWL at one year (one-way ANOVA, $p>0.05$)

Conclusion: There is a statistically significant correlation between the efficacy of LAGB and number of clinic appointments attended post-operatively in the first year. Less follow-up appointments were attended in the second year without much effect on %EWL.

P.284 Update on Salvage Gastric Banding for Failed Roux-en-Y Gastric Bypass

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Background: After Roux-en-Y gastric bypasses (RYGB) up to 15% patients fail to achieve 50% excess weight (%EWL) loss at 2 years. Salvage laparoscopic adjustable gastric banding (LAGB) is reported although there are few studies sufficiently powered to assess LAGB as a salvage procedure. We aim to add a further 82 patients data to our previously reported 43 patients.

Methods: Review of prospectively collected was undertaken. Data collected included weight, height, body mass index (BMI), gender, race, age, operative time, band type, hiatal hernia repair, length of stay, post-operative complications and percent excess BMI loss.

Results: A total of 125 patients (102 female, 23 male) underwent salvage LAGB, the majority 102 (83%) having undergone primary RYGB elsewhere an average of 12.7 years prior. Mean age at revision was 47 years (+/10.7). Mean OR time was 67 minutes. BMI before RYGB was 51.2 (+/8.78), before salvage LAGB 43.04 (+/6.57) and fell to 35.9 (+/6.75), 33.8 (+/7.19) and 33.9 (+/6.37) at 1, 2 and 3 years respectively. 19 (15.2%) patients required re-operation for complications related to the LAGB including 6 (4.8%) band erosions, 10 (8%) port/tubing revisions for leakage or migration, 2 band slips, 1 band and port infection, 1 band intolerance and 2 esophageal obstructions. There was no mortality.

Conclusion: Patients with weight loss failure after LRYGB have limited options. Salvage LAGB provides good further weight loss although the higher rate of complication than primary LAGB merits appropriate patient counseling and close follow-up.

P.285 Long Term Outcomes of Laparoscopic Adjustable Gastric Banding

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Introduction: Laparoscopic procedures have emerged over the past decade for treatment of obesity. Laparoscopic adjustable gastric banding is the easiest surgical technique for morbid obesity.

Material and Methods: A total of 272 consecutive patients who had undergone laparoscopic adjustable gastric banding between May 2005 and April 2012 in authors clinic were contacted for evaluation. The main outcome measures were complications, secondary operations, percent excess weight loss, mortality, patient satisfaction and band removal rate.

Results: The follow-up rate was 85%. (Figure-1). Mean age of patients was 30.6 years. Mean body mass index of patients was 48.47 ± 7.8 kg/m². Median follow-up interval was 36 months (8–81) and band removal rate was 34%. There was no mortality. Of all patients, 67 (34%) had band removal. The band was removed laparoscopically in 41 patients. The main reason for band removal was slippage followed by band erosion. (See at complications - Figure-3) After band removal, 6 patients had re-banding (Figure-2). Overall, the mean percent excess weight loss was 65% for the 1st year, 57% 2nd year, 53% 3rd year, 40% 6th year (Figure-4). Mean percent excess weight loss for those who had band removal was $27.8 \pm 5.78\%$ (12.5–34.1%). Overall satisfaction index was rated as “good” for 42% of patients.

Conclusions: Despite a low satisfaction index, considerable mean percent excess weight loss and vast improvement in co-morbidities is achieved after laparoscopic adjustable gastric banding. The authors conclude that laparoscopic adjustable gastric banding can be utilized as the initial surgical procedure in morbid obesity.

P.286 Long-term Results of Laparoscopic Adjustable Gastric Banding: Systematic Review and Critics

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Introduction: Laparoscopic adjustable gastric banding (LAGB) long-term results are scarce and controversial. Most of the studies reporting results 5 years present important bias. Previous systematic reviews do not consider the follow-up rate as an important source of error.

Methods: We performed a systematic review of the peer-reviewed published literature according with the PRISMA statements. Studies on LAGB published up to December 2012, reporting at least 20 patients with a follow-up rate 80% at each time point were included. Outcomes considered were weight loss and reoperation rate.

Results: From a total of 2004 reports extracted, 80 studies reported a follow-up 5 year and 13 fulfilled the entry criteria. In 4381 patients, mean follow-up was 76 months (60–144), Mean %EWL was 44.2% after 5 years. An %EWL higher than 50% was observed in 40.1% of patients. The reported reintervention rate and removal rate were 25 % and 12 % respectively. Nevertheless, their calculated incidence was 5.8% and 3.2% per year (or 29% and 16% at 5 years)

Conclusion: The low methodological quality of most studies on LAGB make difficult to know what the real long-term results are. This review indicates that the number of graft loss increase with time. After 5 years, one patient over three has been reoperated, and 40% have a successful weight loss. Results from studies with a high follow-up rate are lower than previously reported in other systematic reviews.

P.287 Use of Gastric Banding for Failed Non Restrictive Bariatric Surgery

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Introduction: Revisional bariatric surgery is increasing in number of cases. After Roux-en-Y gastric bypass (RYGB), about 15 % (5–40%) of patients do not achieve successful long-term weight loss. The reasons are varied and very different surgical solutions are tried. We report our laparoscopic experience with application of gastric banding for failed nonrestrictive bariatric surgery.

Methods: We performed 3 reoperative procedures on 530 bariatric operations performed (BMI between 35 to 64) between 2007 and 2012. Reoperation was required for unsatisfactory weight loss for two patients with Roux-en-Y gastric bypass (RYGBP), at one years for primary operation, and one, with bilio-intestinal bypass (BIB) at three years. For two patients with RYGBP the initial BMI was 53.4 and 43, for the patient with BIB was 48.8; at the time of revisional surgery the BMI was 52 for the first patient and 41 for the second, the same for the patient with BIB. Revisional operation time was longer than primary bariatric surgery (100–180min). We have no intra or postoperative complications, no conversion to open surgery was required and no one patients die.

Results: At two years from this operations the BMI are 37.3 with %EWBL of 50.3 for the first, and, a BMI of 27.9 with % EWBL of 70.4 for the second patient with RYGBP; a BMI of 33.4 with %EWBL of 56.4 for the patient with bilio-intestinal bypass.

Conclusions: In our experience, the application of an adjustable gastric band ("salvage banding") on non-restrictive bariatric operations could prevent weight regain or increase weight loss.

P.288 Feasibility of Subcutaneous Access-Port Mesh Fixation for Laparoscopic Adjustable Gastric Banding Surgery

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Introduction: Subcutaneous access-port related complications have contributed significantly to morbidity and revision surgery after laparoscopic adjustable gastric banding (LAGB) surgery. Access-port fixation using mesh is a new technique and involves suturing a piece of polypropylene mesh to the base of the port and placing them in a subcutaneous tunnel without any further anchoring sutures to the fascia. We present our experience with this new technique. The aim of this study was to evaluate access port related complications and re-operation rates in patients who had undergone LAGB with access-port fixation using polypropylene mesh.

Methods: All patients operated by a single surgeon who underwent primary LAGB with access-port fixation using mesh placed in epigastrium between 2009 and 2012 were included in the study. Data was collected prospectively. Any patient who had postoperative complications was referred back to operating surgeon.

Results: Between January 2009 and December 2012, 1619 patients underwent primary LAGB with epigastric port fixation using mesh. Ninety two percent (n=1483) were females. The median age was 42 years (range 18–70). The overall access-port related complication rate was 1.3 percent (n=21) with a median follow-up of 19 months (range 0–48).

Complication	n	percent
Tilted port	13	0.8
Port-site infection	5	0.3
Port-site bleeding	2	0.1
Port-site pain	1	0.1

Conclusion: Access-port fixation using mesh was noted to be a safe alternative with low morbidity and complication rates. Potential benefits including shorter operating time, reduced pain and better cosmesis will need further confirmation in a randomized controlled trial.

P.289 Laparoscopic Adjustable Gastric Banding (LAGB): Long Term Follow Up

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Introduction: Laparoscopic adjustable gastric banding (LAGB) has lost popularity because of its disappointing results regarding weight loss and weight regain. The aim of our study is to describe long-term clinical outcomes after LAGB in terms of excess BMI loss (%EBMIL) and weight regain with 10-year follow-up (FU).

Method: Retrospective cohort study of obese patients submitted to LAGB by the same bariatric surgery team, from January 2002 to December 2012 according to an established study and FU protocol.

Results: A total of 97 consecutive adult patients submitted to LAGB. 74 (76.3%) female, mean preoperative BMI 37.4 (± 4.8 ; 30.4 – 49.3) kg/m². 2 patients presented incisional hernia. No mortality in this series. Mean excess BMI loss (% EBML) of 66%, 71%, 60% and 36% at 1, 2, 3 and 4 years, respectively. Revisional procedures were performed in 15 patients (16%) because of insufficient weight loss and/or weight regain: the band was explanted in 9 cases (9%), and 6 patients required repositioning of the band because of dysphagia. After band removal, 9 cases had laparoscopic sleeve gastrectomy. 15% of FU at 10 years with mean %EBMIL 40%.

Conclusion: In our experience, LAGB has poor outcomes regarding weight loss and weight regain at mid and long term FU.

P.290 Metabolic Changes After Laparoscopic Adjustable Gastric Banding in Morbidly Obese Patients

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is effective for weight reduction in morbidly obese patients. However, the data about its effect on metabolic syndrome (MS) limited. The aim of the study is to assess weight loss and changes of metabolic parameters 1 year after LAGB in a prospective single center cohort study in morbidly obese subjects.

Method: Physical examination, body weight (BW) parameters and metabolic profile were assessed at baseline and 1 year after LAGB in morbidly obese subjects. The incidence of MS was evaluated according to National Cholesterol Education Program ATPI III criteria.

Results: One year after the operation data from 90 patients out of 103 were available. Mean excess weight loss (%EWL) of 33.1% was associated with a significant improvement in all metabolic parameters: decrease of hypertension by 15.8%, hypertriglyceridemia by 42.6%, and hyperglycemia by 46.3%; and increase in high density lipoprotein cholesterol by 48.3%. This resulted in the resolution of MS in 44.2% of subjects. The significant change in the distribution of MS components was observed with the highest frequency of 4 components before and 2 components after surgery. Patients with MS at baseline lost 29.9% of %EWL compared to 44.3% in those without MS ($p = 0.009$).

Conclusion: LAGB resulted in reduction of BW parameters in morbidly obese subjects 1 year after the operation. Along with the weight loss, resolution of MS and a significant shift towards decrease in the number of MS components was observed. Patients with MS were more resistant to the weight loss.

P.291 Gastric Banding and Gastric Plication: Effective Association?

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Introduction: Laparoscopic Adjustable Gastric Banding (LAGB) is widely known as one of the safest procedures for the treatment of morbid obesity, having the lowest rate of early complications and an acceptable weight loss result. Our aim was to evaluate if the association of LAGB with the Gastric Plication (GP) could improve our outcomes in terms of weight loss and number of band adjustments.

Method: 20 patients (group A) undergoing LAGB from April 2012 to September 2012 were enrolled. In these patients Gastric Plication of the Fundus was performed laparoscopically in addition to LAGB. 20 patients

undergoing LAGB only formed the control group (group B). The following data were recorded: BMI, follow-up at 1, 3, 6 months, %EWL, short-term complications, operative time, length of hospital stay, number of adjustments.

Results: Group A (LAGB + GP) had a mean preoperative BMI of 42.8 kg/m²; the mean operative time was of 89 min and hospital stay of 4 days. Group B (LAGB only) had a mean preoperative BMI of 41.6 kg/m²; the mean operative time was of 61 min and the hospital stay of 2.5 days. No early complications were registered. There were no significant differences in terms of %EWL at 1, 3, 6 months and number of band adjustments.

Conclusion: Despite the short follow-up period considered (6 months), we believe that the association of LAGB with the GP of the Fundus does not improve outcomes in terms of weight loss and adjustments, causing instead a longer operative time.

P.292 Short-Term Outcomes after Laparoscopic Gastric Plication

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Background: This study present our short-term results of laparoscopic gastric plication (LGP), this new technique introduced in the treatment of morbid obesity.

Methods: Between 2010–2012 we perform 54 LGP with a mean age of 42.8 years (25 to 54) and a mean BMI of 41.7 kg/m² (34 to 49). We used five-port approach in the same position as for sleeve gastrectomy. After dissecting greater curvature of the stomach we in folded it using two layers of non-absorbable running suture, starting from 2 cm below Hiss angle to 5 cm of the pylorus. We ensure a patent lumen using a 36-Fr boogie.

Results: No conversions. Mean operative time was 72.5 min (40 to 90 min) and mean hospital stay was 48 h (24 to 72). Patients returned to their regular activities at an average of 7 days (4 to 9) following surgery. No intra-operative complications occurred. 19 patients (35.1 % of cases) had nausea and vomiting, which disappear after 2–3 days. 5 patients (9.2 % of cases) had these symptoms up to two weeks and required parental nutrition. Excess weight loss (EWL) after 1 month was 26.2 % (20% to 30%), after 3 months was 45.7 % (28 % to 57 %), after 6 months 58.9 % (45 % to 73 %) and after one year 72.4 % (62 % to 89 %).

Conclusions: This new procedure has poor results in terms of weight loss then sleeve gastrectomy, but with minimal risk of early postoperative complication and very low cost.

P.293 Gastric Plication for Obesity: A Systematic Review

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Background: Gastric plication is a newly recognized bariatric procedure. Some surgeons begin to hope with its advantages, but the others are still slow and sure. Our aim was to document all the published results of gastric plication for obesity and to find out its place in bariatric surgery.

Methods: Electronic searches of the PubMed, Ebsco and Google databases were carried out in February 2013 using the keywords (obes* OR gastric OR stomach OR greater OR curve OR curvature OR bariatr*) AND plicat* [Field: All Fields]. No restrictions were made on language, country, or journal. A total of 628 articles were retrieved for review and 10 articles were selected for inclusion in the analysis.

Results: A total of 1403 cases were analyzed. The mean age of patients was 32.9 years (range: 12–65 years). The majority of patients were female

(80.8%). Mean BMI was 41.3 kg/m² (35 to 46). There was a tendency to prefer gastric plication to lower weighted patients over the years. Mean EWL% was 59.6 (35–67) at 12 months. However, the risk of inadequate weight loss (EWL% <50) was increasing with weight. This risk was suggestively increasing when the BMI was higher than 40 kg/m².

Conclusion: More studies are necessary to make a more clear comment. However, our analysis pointed out that gastric plication was not a sufficient surgical option for morbidly obese (BMI higher than 40 kg/m²) patients.

P.294 Laparoscopic Greater Curvature Plication (LGCP): Report from an IFSO-EAC Center with a Minimum 6-mo Follow-up

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Background: Restrictive procedures are considered effective to treat morbid obesity but the long term results are still questionable. Although still investigational, LGCP is gaining wider consensus because no foreign body is implanted and no part of the stomach is taken-out. We here report our results with a minimum 6-mo follow-up.

Patients and Methods: From January 2011, 50 informed consent patients underwent LGCP for morbid obesity. The mean age was 36 ys (range 16–70), 43 were female. The mean BMI was 40.9 (37.5–51.8).

Data were prospectively collected in our data base.

All the procedures were carried out under laparoscopy. After dissection of the greater curvature, gastric plication was achieved with two rows of embricating sutures running from just below the E-G junction to the proximal antrum, on a 34 Fr bougie. Gastric patency was confirmed with i.o. endoscopy. On POD1, patients underwent upper GI series with gastrograhin, to assess voiding and shape of the gastric tubule. Liquid diet was then started and patients were discharged on soft diet the following days. Routine follow-up assessments were scheduled (1, 3, 6 and 12 months).

Results: The mean operative time (including endoscopy) was 73 min (60–110), the mean hospital stay was 3.8 days (3–5). No conversion was required. Nausea was reported and well tolerated by 40% of patients. One patient had an acute gastric prolapse on POD-10, that required emergent fundectomy. Late prolapse (> 6-mo) was discovered in 3 patients. No other complication was reported.

Late re-do surgery after LGCP consisted of 3 fundectomies, 2 take-down, 1 replication, 1 LSG, all uneventfully in post-op course.

Mean BMI was 35.9, 33.1, 33.4, 32.8, 34.1, 35.9 at 3, 6, 9, 12, 18 and 24 months, respectively, while %EBL was 33.5, 42.1, 52, 55, 49.7 and 59.5 at the same intervals, respectively.

Conclusion: LGCP seems to be a new promising approach for morbid obesity in terms of efficacy and tolerability. Larger series and longer term results are needed to confirm these clinical observations.

P.295 Gastroplication Tehnical Particularities and Complications

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Gastroplication is a relatively easy technique that can have inconsistent results in terms of weight loss and the complications appearance. In our experience there are several key points in surgical technique that can prevent these disadvantages. These key points are related to Hiss angle dissection, left diaphragmatic pillar dissection, suturing with separate wires or surjet, surjet tension, folding distance from the pilorus, suture material used.

P.296 Management of Regain After Laparoscopic Gastric Plication

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Introduction: Laparoscopic gastric plication (LGP) with 13 years' experience has introduced itself as a well-accepted restrictive bariatric operation. The rate of long term regain is like other restrictive methods and the plan of regain cases is very important based on technical point of view. The aim of this presentation is to explain the plan of management of regain after LGP.

Method: All of morbid obese cases with BMI 35 to 45 were candidate of LGP if they had enough motivation and cooperation for post-operative period of diet and exercise. One-row plication was from 2000 to 2006 and 2-row until now. Plan of post-operative follow up was 2 years directly and then indirectly. "Failure" group was cases with less than 30% EWL after plication. "Regain" group was cases with good result at first, but due to poor cooperation weight gain occurred until the rate of EWL was less than 30% of primary weight. Plan of regain operation was replication or sleeve in patients with temporary problems caused poor motivation. In cases with permanent problems to allow continues diet and exercise mini gastric bypass or malabsorptive method was advised.

Result: 10 out of 1000 cases were "failure" group with less than 30% EWL. It has been shown by endoscopy that in these cases the problem was cut of thread especially in one-row plication (8/10) mainly due to training curve and forceful manipulation of thread by needle-holder. The rate of regain is about 15% after 4 years (63/400), 40% after 10 years (19/50) and overall regain or failure in all of cases was 9% (87/1000). 10 cases of failure were candidate of replication due to technical error. "Regain" group subdivided to two groups, G1 (51): wrong selection for plication which mainly were men with high BMI. They were candidate for gastric bypass (15/51) or malabsorptive methods (25/51), G2 (26): a) patients with temporary problems (18) preventing control of diet and exercise like pregnancy or b) permanent problems (8) like psychological disturbance due to divorce. The first group was good candidate for replication (15) or gastric bypass (3) and second group for malabsorptive method (5/8). **Conclusion:** Plan of regain management after LGP is well known and practical. Plication of stomach has not any prohibitory role to perform other bariatric methods in regain cases.

P.297 Laparoscopic Omega-Loop Mini Gastric Bypass for the Conversion of Failed Sleeve Gastrectomy: Early Experience with a Feasible and Safe Procedure

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Background: Despite the initial efficiency of sleeve gastrectomy (SG) as a restrictive procedure, some patients remain exposed to obesity comorbidities because of unsatisfactory weight loss or regain, requiring SG conversion to an additional malabsorptive procedure.

Methods: The mini-gastric bypass (MGBP) was evaluated for conversion after primary SG failure. An ante-colic end-to-side gastrojejunal anastomosis was created, 200 cm distal to the duodeno-jejunal angle, on a long and narrow gastric pouch.

Results: Between October 2006 and December 2012, 804 laparoscopic MGBP were performed for morbid obesity. Among them, 38 patients (3.5%) with mean age 49.5 ± 11.2 years had previous SG. Planned conversions were performed laparoscopically in all but 4 patients (19%) who required laparotomy, within 26.3 months (8.2-63.7). There was no global 30-day mortality and the morbidity rate was 9.5%, including 1 incisional hernia and 1 spontaneously resolvable biliary fistula after cholecystectomy. Mean BMI before MGBP was 44 ± 7.7 (35.8 - 55.4).

Conversion to MGBP allowed mean BMI and percentage of excess BMI loss of 39.9 kg.m⁻² and 26.8% at 3 months, 36.5 kg.m⁻² and 37.2% at 6 months, 34.6 kg.m⁻² and 49.3% at 1 year, 36.2 kg.m⁻² and 48.6% at 18 months, and 35.7 kg.m⁻² and 51.6% at 24 months respectively. Intermediate follow-up was 17±12.9 months (3.2-52).

Conclusions: Laparoscopic conversion of SG to MGBP is feasible, safe, and efficient for significant excess weight loss. Definitive results at 2 and 5 years are awaited for long term procedure validation.

P.298 Mini Gastric Bypass as a Second Bariatric Surgery for Nutritional Problems of Restrictive Surgery

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Introduction: The failure of restrictive procedures due to problems related to nutritional behavior may necessitate a second bariatric procedure. Solid food intolerance with vomiting & sweet eating are the commonest problems with weight loss life style which in many cases are good enough indications for a second surgery.

Method: MGB was performed in 30 consecutive patients with nutritional behavior problems after restrictive surgery.

The outcome of surgery was assessed at 3, 6, 9 & 12 months for correction of nutritional behavior problems as well as the BMI & the % excess weight loss. Nutritional deficiencies due to MGB were monitored.

Results: Pre-operative nutritional assessment showed an overlap between solid food intolerance, vomiting & sweet eating in 25 patients. MGB was successful in prevention of vomiting, correction of solid food intolerance in 27 out of the study 30 patients. The sweet eating behavior was corrected in all patients but new nutritional problems in the form of dumping, bilious vomiting are reported. Weight loss results were very satisfactory at 12 months.

Conclusion: MGB is a good successful second procedure in correction of nutritional problems arising after primary restrictive surgery. Both solid food intolerance & sweet eating are successfully corrected. There is also a very satisfactory improvement in weight loss results.

P.299 Mini Gastric Bypass Supersedes Sleeve Gastrectomy and Roux-n-y Gastric Bypass as Bariatric and Metabolic Procedure

PRESENTER: G. Jammu¹

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Introduction: Obesity is a growing danger in India. The lap band was popular but has been abandoned. The RNY and Sleeve are popular but both have well recognized problems.

The search continues for a procedure that is patient friendly, technically easy, low risk, powerful with high success rates, durable and easy to revise or reverse if needed. The Mini Gastric Bypass by Dr. Rutledge seems to have many of these important features.

Method: Report on 450 procedures performed at Jammu Hospital Jalandhar, India from January 2007 till December 2012. 150 patients each procedure: Laparoscopic Sleeve Gastrectomy (LSG), Laparoscopic Roux-n-y Gastric Bypass (RNY) and Mini Gastric Bypass (MGB). The outcomes were compared.

Results:

	MGB	RNY	LSG
Mean Operative Time (Minutes)	40	95	50
Mean Excess Weight Loss (%)	75-85	70	60-70

Mean Resolution of Type 2 DM (%) (C Peptide > 1)	>95	>95	60-70
Mean Hospital Stay (Days)	2	3	2
Mean Cost	Minimum	Maximum	Minimum
Immediate Post-Operative Complications	Minimum	Medium	Maximum
Late Complications	Minimum	Medium	Maximum
Redo	Easy	Difficult	Difficult
Conversion to other procedures	Easy	Difficult	Difficult
Surgery in Super Obese	Easy	Difficult	Easy but may need second surgery
Mortality	0	<1	1

Conclusion: India has had the sad experience with failed bariatric surgery. This study confirms others and reported experience of other Indian surgeons, that MGB is superior to both RNY and the Sleeve by almost every measure. It is now the preferred procedure at our center due to its less morbidity, mortality and maximum effectivity.

P.300 Suture Less Mini Gastric Bypass

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Introduction: Gastric bypass surgery has been dominant (goal) standard operation for obesity.

Mini gastric bypass now is being replacing the Roux-EN-Y gastric bypass because of the simplicity in doing it.

Materials & Methods: We present here a method with a video presentation of how to do it. The number of cases in over last 5 years is 178 cases, 154 females and 24 males.

Results: Suture less mini gastric bypass is the safe, easy to make operation for obesity especially in females and it is as effective as the traditional gastric bypass

Conclusion: A short video presentation will be presented.

P.301 Short Term Outcomes of Revisional Bariatric Surgery at BMI Abu Dhabi

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Introduction: The UAE is amongst the tenth highest rates of type 2 DM and obesity in the world. Bariatric surgery is the most effective long term solution for morbid obesity. However, many patients fail to lose weight, regain their lost weight or develop complications necessitating revisional bariatric surgery. Outcomes of bariatric surgery from the UAE are not yet studied.

Methods: We reviewed our prospectively maintained database for consecutive revisional bariatric surgeries at the Bariatric and Metabolic Institute (BMI) Abu Dhabi from June 2009 to March 2013. Patient demographics, types of operation and perioperative outcomes were evaluated. Data are presented as mean (SD) for normal distributed data and median (interquartile range) otherwise.

Results: A total of 67 bariatric surgeries were performed at BMI Abu Dhabi. In this cohort: 50(75%) were female, mean age was 36.7(7.65) years, mean BMI 43.79 (10.2) Kg/m², median length of stay was 2 days with IQ range of 1. Common

comorbidities included dyslipidemia 9(13.5%), GERD 8(12%), diabetes 8(12%) and hypertension 7(10.5%).

Revisional procedures included: LAGB removal only in 45(67%), LAGB removal and conversion to RYGB in 37(55%), conversion of VBG to RYGB in 4(6%), LAGB removal and replacement of LAGB in 1(1.5%) and conversion to sleeve gastrectomy 2(3%). The complication rate was: leaks 1(1.5%), stenosis 0%, pneumonia 1(1.5%), conversion to open 2(3%), re-admission 4(6%), bleeding requiring blood transfusion 0%, line sepsis 1(1.5%), gall stones requiring cholecystectomy 2(3%) and Mortality 0%.

Conclusion: LAGB failure was the commonest reason for revisional bariatric surgery at BMI Abu Dhabi. Conversion to RYGB is our preferred strategy. Complication rates were very low following revisional procedures. Revisional bariatric surgery is safe with low morbidity and excellent short term outcomes.

P.302 Our First Two Years Experience with Laparoscopic Roux En Y Gastric Bypass at the Nazareth Hospital EMMS. Review of 42 Patients, Learning Curve, Complications and Management

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Introduction: At our obesity center at the Nazareth Hospital EMMS we have performed bariatric surgery since the year 2001. The only procedure we offered for all our obese patients was Adjustable Gastric Banding (AGB) until 2008, then we started to perform Laparoscopic Sleeve Gastrectomy (LSG) until we reached an average operating time of 45 minutes for this procedure.

Methods: Between the years 2011–2012 forty two patients underwent laparoscopic roux en y gastric bypass (LRYGB). Fifteen patients in 2011 and 27 patients in 2012. All patients were operated by the same team of surgeons. We started with moderately obese patients BMI 37–45 without prior abdominal surgery. After gaining more experience with the procedure we started to operate on more complicated patient with higher BMI and/or prior abdominal obesity surgery.

Results: The duration of the procedure was about 4–5 hours for the first few cases then decreased progressively. One patient out of 15 leaked from the gastro-jejunal anastomosis in 2011. One leaked from the gastro-jejunal anastomosis and another leaked from the jujeno-jejunal anastomosis in 2012. All leaks were managed conservatively with favorable outcomes. We had one immediate post-operative bleeding which required urgent laparotomy. There was no mortality.

Conclusion: Becoming more skilled and familiar does not seem to affect the type or rate of complications in LRYGB for surgeons who have experience with other bariatric surgery procedures.

P.303 One Year Outcomes of Gastric Bypass and Sleeve Gastrectomy at BMI Abu Dhabi

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Introduction: The UAE has amongst the tenth highest rate of obesity in the world. Bariatric surgery is the most effective long term solution for morbid obesity. Most reports of bariatric surgery in the Middle East include gastric banding and sleeve gastrectomy (LSG). This is one of the first studies to report bariatric surgery outcomes from the UAE.

Methods: All consecutive patients undergoing primary bariatric surgery at the Bariatric and Metabolic Institute (BMI) Abu Dhabi from June 2009 to

September 2012 were investigated. Patient demographics, type of operation and perioperative morbidity, mortality and percentage of excess body weight lost at 12 months (EWL%).

Results: A total of 250 primary bariatric surgeries were included, 171 (68.7%) were female, mean age (SD) was 35.6 (9.5) years. RYGB accounted for 183 (73.8%) and LSG for 65 (26.2%). Mean BMI (SD) for RYGB and LSG was 47.9 (9.8) and 44.6 (5.6) Kg/m² (p-value 0.001). The complication rate for RYGB and LSG respectively was: leaks 0.4% & 0%, stenosis 0.4% & 0%, pneumonia 1.5% & 0%, conversion to open 0%, bleeding requiring reoperation 0.4% & 1.5%, line sepsis 0.4% & 0%, and mortality 0%. The 12 month follow-up rate was 107/114 (94%). Mean EWL% was higher for RYGB at 12 months at 76.3%; than LSG at 70.2% (p-value 0.02).

Conclusion: This is largest series of RYGB from the UAE and the Middle East region. Patients lost >70%EWL after all bariatric surgeries with few complications. RYGB patients achieved higher EWL than LSG at one year despite being significantly heavier.

P.304 Revision of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass – Our Technique and Early Results

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is increasingly being favoured as a standalone bariatric procedure internationally. The effect of LSG on reduction of excess weight and comorbidities is based on both a restrictive mechanism and on hormonal changes but a revision rate has been reported from 5.8–11%. Indications of revision bariatric surgery (RBS) in LSG are insufficient weight loss, gastroesophageal reflux disease (GERD), development of dysphagia due to stenosis of the gastric sleeve, and failure in the resolution of comorbidities.

Method: We present our retrospective analysis of 6 patients who underwent RBS from LSG to Roux-en-Y Gastric Bypass (RYGB). Indications were insufficient weight loss (n=4) and severe GERD (n=2). Complete mobilisation of the gastric tube was done with careful attention to the adhesions with Liver. A micropouch of 30ml was created with the initial firing of linear stapler from the greater curvature towards the lesser curvature in contrast to the conventional RYGB.

Gastrojejunostomy was created with a linear stapler. The alimentary limb was constructed using 150cms of jejunum and the biliopancreatic limb was kept at 75cm. Jejunojunctionostomy was created with a linear stapler and an abdominal drain was kept in all cases.

Results: The decision for conversion of LSG to RYGB in all the cases was based on the surgeons' experience with RYGB. There were four females and two male patients in the study, with a mean age of 42(36–48) years. The mean preoperative BMI was 46 kg/m² (41–52kg/m²). After the primary LSG, a mean % excess weight loss (EWL) of 49% (42–62%) was achieved in two years and the mean BMI had declined to 38 kg/m² (32–45kg/m²). Revision was performed after a mean period of 28 months. The revision resulted in mean %EWL of 28 % (22–32%) at 3 months and 68% (58–74%) at 12 months and the mean BMI decreased to 32kg/m² (29–38 kg/m²) at 3 months and 28 kg/m² (25–31 kg/m²) at one year. Resolution of GERD in both patients was achieved within 3 months. Mean operative time was 135 minutes with a mean hospital stay of 4 days. No major morbidity or mortality was associated with the procedures.

Conclusions: RBS is associated with higher risk of perioperative complications compared with the primary procedures, although it appears to be safe and effective when performed in experienced centers. The results from this study conclude that the revision of a LSG to RYGB is safe and effective in short term for patients who do not achieve sufficient weight

loss or develop complications like GERD. Larger series and long term followup is necessary for the recommendation of RYGB as revision procedure for a failed LSG.

P.305 Distal Excluded Stomach Resection in Laparoscopic Roux-en-Y Gastric Bypass for Morbid Obesity: A Single Institution Experience with 10 Cases in Mainland China

PRESENTER: C. Wang¹

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Introduction: Distal stomach is routinely excluded in laparoscopic Roux-en-Y gastric bypass (LRYGB). This may induce potential risks of series complications, especially in obese patients with gastric diseases. Minimizing the risks has important significance to improve the obesity related comorbidities and to prevent postoperative complications. There is dramatic increase in number of obese patients in China and the incidence of gastric diseases among Chinese is high. The aim of this study is to investigate the safety and efficacy of distal excluded stomach resection in LRYGB for Chinese population.

Method: 10 cases of morbid obese patients accompanied with gastric diseases underwent distal excluded stomach resection in LRYGB performed between February 2011 and September 2012. It included 6 cases with gastric ulcer, 3 cases with gastric polyp and 1 case with gastric stromal tumor. All patients were males with average age of 35.3 (range, 16–50 years old). The patients were followed up for 6 to 24 months. Body mass index (BMI), percentage of excess weight loss (%EWL), obese-related comorbidities and postoperative complications were observed and analyzed retrospectively.

Results: All the operations were successful without conversion to open operation. Average preoperative BMI was 48.6 (range, 35.1–90.0) kg/m². Average operation time was 135 (range, 110–270) minutes, average operation blood loss was 20 (range, 10–50) mL, and average length of postoperative hospital stay was 7 (range, 5–11) days. Body weight and BMI decreased significantly 1 month after the operation and reached a relatively low level after 12 months then became stable. %EWL after 6 months and 12 months of operation were (44.2±5.6) % and (55.5±4.7) % respectively. All obese-related comorbidities such as type 2 diabetes mellitus, hyperlipidemia, sleep apnea, hypertension and fatty liver were improved significantly. 20% (2/10) patients showed postoperative complications, including 1 case of leak in gastric pouch and 1 case of umbilical infection which were cured by conservative treatment. No any severe complications were observed.

Conclusion: Distal excluded stomach resection in LRYGB was safe and effective in selected Chinese morbid obese patients with gastric diseases. It could not only cure the related gastric diseases but also minimize the potential risks of postoperative complications of LRYGB. The long term outcomes and its routine application to all patients in LRYGB still need further investigation.

P.306 Treatment of Obesity and Metabolic Disorders by Laparoscopic Roux-en-Y Gastric Bypass: A Single Institution Experience with 300 Cases in Mainland China

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Introduction: With the rapid economic development, there was dramatic increase in number of obese patients in mainland China, which has brought serious social

and health problems. Most of them suffered from central obesity that characterized by abdominal visceral fat accumulation. It damaged organs of cardio-cerebral vascular systems. Bariatric surgery in mainland China is still in its initial stages. The aim of this study is to investigate the safety and efficacy of the treatment of obesity and metabolic disorders by LRYGB in mainland China.

Method: Between June 2004 and October 2012, LRYGB was performed in 300 patients of central obesity. The patients were followed up for 6 months to 8 years. Change of body weight, body mass index (BMI), waist circumference, and rate of excess weight loss (%EWL) were compared before and after surgery. Major comorbidities such as type II diabetes mellitus (T2DM), hypertension, hyperlipidemia and sleep apnea were also observed.

Results: All the 300 procedures were performed successfully without conversion to open surgery. Mean duration of operation was 103 minutes (range, 80–270 minutes), mean operation blood loss was 15mL (range, 10–50 mL), and mean postoperative hospital stay was 7 days (range, 5–10 days). Body weight and BMI decreased significantly 1 month after the operation and reached a minimum level then became stable. Mean %EWL in the 12 months after surgery was 56.0% ($P<0.05$). Of the 79 patients with T2DM, 72 (91.4%) showed complete resolution or significant improvement. 94% of other obesity-related comorbidities were also improved significantly. 11 cases showed postoperative complications, with rate of incidence and mortality were 3.7% and 0.3% respectively.

Conclusion: Treatment of central obesity and metabolic disorders by LRYGB, especially for those with T2DM, was safe, effective and long lasting to mainland China population. It is worthy of popularization and application.

P.307 Improvement in Glucose Metabolism After Bariatric Surgery in Patients with BMI>35: Comparison of Roux- En-Y Gastric Bypass and Sleeve Gastrectomy

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Aim: The exclusion of the proximal small intestine is thought to play a major role in the rapid improvement in the metabolic control of diabetes after gastric bypass. However diabetic patients with BMI >35 were also found to have control of diabetes after sleeve gastrectomy

Method: In a retrospective study 69 patients with BMI >35 underwent either of the two procedures. There 30 patients in the Laparoscopic Sleeve Gastrectomy arm (LSG) and 39 patients in the Roux en Y Gastric Bypass (RYGB) arm. The primary outcome was remission of T2DM (fasting glucose <126 mg/dL and HbA_{1c} <6.5% without glycemic therapy). Secondary measures included loss of weight and resolution of metabolic syndrome.

Results: The resolution of diabetes in both arms were comparable with about 95% resolution in both arms.

Conclusion: Both LSG and RYGB are effective surgeries in the treatment of diabetes mellitus in obese patients with BMI>35

P.308 Conversion of Laparoscopic Adjustable Gastric Banding to Laparoscopic Roux en-Y Gastric Bypass. A Comparison to Primary Laparoscopic Gastric Bypass

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Introduction: Laparoscopic Adjustable Gastric Banding (LAGB) has a considerable failure rate. Laparoscopic Roux en-Y Gastric Bypass (LRYGB) is one of

the rescue options. The aim of this study is to compare immediate and long term outcomes between LAGB converted to LRYGB and primary LRYGB.

Methods: Comparison of all the patients converted from LAGB to LRYGB to a cohort of patients who underwent primary LRYGB (match ratio 1:2).

Results: Between 2008–2012, 45 patients underwent conversion of LAGB to LRYGB. Female\male ratio 75%:25% Mean age 40.5 years, Mean BMI 42.5. They were compared to 90 patients who had a primary LRYGB during the same time period. Female\male ratio 70%:30%, Mean age 39.5 years, Mean BMI 45.9, Groups were comparable regarding prevalence and severity of comorbidities.

Mean operative time for the conversion group was 165 min compared to 128 min for the primary LRYGB group. Early complication rate was 8(17.7%) and 15(18.7%) for the conversion and the primary groups respectively. Late complication rate was 23(51.3%) –conversion and 35(43.75%) for the primary LRYGB. After a mean follow-up time of 24.8 months primary LRYGB reached a BMI of 31.2 (% BMI loss 31.9) and the conversion group a BMI of 32.7 (% BMI loss 23.7). Resolution of comorbidities was comparable.

Conclusion: Albeit longer operating time, conversion of LAGB to LRYGB is safe with the same early and late complication rates as a primary LRYGB. Weight loss is less but resolution of comorbidities is comparable. Conversion of failed LAGB to LRYGB is a good rescue option.

P.309 Revisional Gastric Bypass for Inadequate Weight Loss & Weight Recidivism-A Retrospective Study from a Tertiary Care Centre

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Background: With increasing numbers of Bariatric surgeries, the more the incidences of Revisional surgeries will be. This may be true even for purely malabsorptive procedures like a biliopancreatic diversion or restrictive – malabsorptive procedures like a roux en Y gastric bypass. The results of these primary procedures are definitely better in the long-term than comparing pure restrictive procedures but the problem has been when considering revisional operations after these procedures especially in the context of inadequate weight loss or weight recidivism. Various different options have been reported in literature but the results have been quite variable and none of the options have proven to be ideal in this situation.

Materials & Methods: In this article, we retrospectively have analyzed all patients who underwent revisional roux en Y gastric bypass in our institute between 2005 to for inadequate weight loss and weight recidivism and have analyzed their outcome in terms of %excess weight loss and alteration of obesity related comorbidities including diabetes mellitus, hypertension and dyslipidemia.

Results: A total of 10 patients had received revisional gastric bypass between 2005–2012 which included 4 patient who received a pouch revision with change in alimentary limb lengths, 2 patients with only pouch revision, 2 patients with banding and 2 reversal of gastric bypass back to normal anatomy (one patient was patient who had a revisional sleeve to bypass was reversed back to normal sleeve anatomy). The results have been variable with %EWL ranging between 0–57% with a average follow-up of 18 months after the revisional surgery. Only 4 patients had associated Type 2 diabetes, 2 patients had remission after the primary surgery which did not reappear after weight regain, one patient had only reduction of medication usage after the primary surgery which continued to be similar after the revisional surgery. The fourth patient had complete remission after the primary procedure which reappeared after weight gain, and did not achieve remission even after the second procedure.

Conclusion: The results highlights the inconsistencies in the behavior of patients after revisional gastric bypass, the reasons largely unknown. Hence any attempt of revisional surgery should be planned depending on understanding of the patient's psychology and behavior and should be undertaken after a thorough discussion with the patient of the possible options and the inconsistencies of the various procedures. Considering this fact, a purely restrictive procedure may be

attempted whenever possible at the first instant which likely has more options if a revisional procedure is required at a later date.

P.310 Laparoscopic Access for Gastric Bypass Using an Optical Trocar Without Pneumoperitoneum. A Single-Centre Experience of 250 Consecutive Cases

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Introduction: There is no clear consensus about the optimal method of entry into the peritoneal cavity for laparoscopic bariatric surgery. The use of Veress needle could cause important vascular and visceral injuries. The open access technique, in obese patients, can be technically difficult and be time consuming. The aim of this study is to examine the safety and efficacy of optical trocar access without previous pneumoperitoneum for Laparoscopic Roux-en-Y Gastric Bypass (LRYGB).

Methods: From January 2009 to December 2012, we conducted a prospective study on 250 consecutive patients who underwent LRYGB for morbid obese in our centre. Optical trocar access without pneumoperitoneum was performed in whole series. After an initial 12-mm transversal skin incision on the left upper quadrant of the abdomen, an optical trocar with an assembled 0° laparoscope was inserted. The following parameters were analyzed: entry time, presence of previous abdominal operations, intra-operative and long-term complications.

Results: Of the 250 patients we analyzed, 67 had previous abdominal surgery. Mean time of trocar insertion was 11,3 seconds (range 5–22 seconds) There were no trocar-related bowel or vascular injuries. No optical trocar-site hernias were observed.

Conclusions: The use of optical trocar without pneumoperitoneum for LRYGB combines the advantages of different entry techniques, allowing a safe and rapid access to the abdominal cavity. It allows avoiding large incisions and subsequent fascial closure, thus reducing the risk of postoperative incisional hernia. Based on our results, obese patients could benefit of this access for any kind of laparoscopic procedures.

P.311 Fast Track Laparoscopic Roux-en-Y Gastric Bypass Surgery

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Introduction: Laparoscopic Roux-en-Y gastric bypass (LRYGB) is considered the gold-standard bariatric procedure and is being increasingly performed throughout the world. A recent systematic review showed that discharge within 23 hours is unsafe, except in selective patients. The usual inpatient length of stay is 2-3days. The aim of this study was to assess the feasibility and safety of discharge within 48hrs following LRYGB.

Methods: A prospectively collected database of consecutive LRYGBs performed by a single consultant surgeon between March 2010 and February 2013 was analysed. Patient demographics, operative time, conversion to open, complications, and length of stay were reviewed.

Results: Over the 36-month period, 181patients(135females, 46males) underwent primary LRYGB. The mean age was 45(20–67)years and body mass index was 48.9(36.3–64.8)kg/m². The obesity surgery mortality risk score, classes A:B:C were 72:96:13, respectively. There were no conversions to open surgery and no deaths. 4(2.2%)patients developed post-operative complications prior to discharge, as shown below:

Complications (No. of patients)	Re-operation <30d	LOS(days)
Post-operative bleed(2)	2(Re-laparoscopy)	5,5
Chest infection(2)	1(Negative re-laparoscopy)	3,6

146(81%)patients were medically fit for discharge in <48h, though 4patients stayed an extra night for social reasons. The average length of stay (LOS) for the remaining 35patients was 4.1(range3-10)days. The reasons for prolonged stay were for nausea and vomiting(7), pain(4), hypoxia(2), pyrexia(1), tachycardia(3), hypotension(1), raised CRP(>100)(6), ECG change(3), drop in haemoglobin(3), glycaemia control(3), re-warfarinisation(2).

Conclusion: Patients undergoing LRYGB can be safely discharged within 48hrs of surgery in the majority (81%) of cases. Fast track LRYGB should become routine practice in the world.

P.312 Results of Gastric Bypass (LGB) and Sleeve Gastrectomy (LSG) in Bariatric Population with Type 2 Diabetes Mellitus: A Comparative Study

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Introduction: Some bariatric techniques are more effective than others in achieving metabolic control of diabetic and obese patients. We compare metabolic effects in these population between LGB and LSG.

Method: Retrospective cohort study. All bariatric patients with DM2 submitted to LGB and LSG between June 2006 and December 2011 by the same team with study and follow-up (FU) according to protocol. Primary endpoints: comparison of excess BMI loss (%EBMIL), levels of HbA1C and status of DM2 1 year after surgery between both techniques. Descriptive and analytic statistics (T-test, Fischer, Kruskal-Wallis).

Results: 162 patients, 68.5% with LGB and 31.5% with LSG, mean preoperative age 49 (±10.9) and 49 (±9) (p=NS) years, respectively. Mean preoperative BMI 37.6 (±4.6) and 43(±9.7) kg/m² (p < 0.005), respectively. Mean %EBMIL 1 year after surgery 73.3% in the LGB group and 75% in the LSG group (p=NS). Mean HbA1C 1 year after surgery 7.1 mg/dl in the LGB group and 5.6 mg/dl in the LSG group (p=NS). 75% of the LGB group and 65% of the LSG group accomplish levels of HbA1C < 6.0 mg/dl at 1 year FU, without significant difference between groups.

Conclusion: In our experience, both techniques achieve an acceptable %PEIMC and metabolic control at short terms in obese diabetic patients. However, to draw better evidence based conclusions larger studies with longer FU are needed.

P.313 Digestive Hemorrhage on Laparoscopic Gastric Bypass Staples Lines Level, ¿Is It Preventable?

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Introduction: Postoperative digestive hemorrhage (PDH) of a laparoscopic gastric bypass (LGB) is a serious complication that could be fatal. The digestive bleeding has different origins, in which can be noticed: mechanic suture line's bleeding, viceral injury, peptic ulcer, among others. Our objective is to achieve the reduction of the digestive hemorrhage on the premature post operator through the effort of the mechanic suture on an entero-entero anastomosis level.

Method: Through a revision of our prospective database, 300 LGB treated patient were analyzed, operated between January 2008 and December 2012. On the first group (n: 162) the entero-entero anastomosis staples line extension was reinforced, with a continuous suture with poliglecaprone 25 3–0 (Monocryl, Ethicon). On the second group (n: 138), the entero-entero anastomosis was not reinforced. A LGD antecolic was done on all patients, with 30 ml pouch, biliopancreatic limb of 50 cm. an alimentary limb of 150 cm. and

both mechanic suture anastomosis. The digestive hemorrhage incidence, surgical time and post operative stay of both groups were compared and a statistics descriptive analysis was made.

Results: The groups do not show statistics difference regarding weight, height, body mass index, loss of weight, diversion length, anastomosis size, surgical time, gender and aspirine consumption. On the first group (with reinforcement), the digestive bleeding incidence was zero. On the second group, the digestive hemorrhage incidence was of a 5,8% (8 patients), wich manifested through frequent bloody depositions, tachycardia and hematocrit fall. Only one patient required a red cells transfusion. The post operative stay took one day more, from one to two days on patients who suffered digestive bleeding. No mortality was registered on this series.

Conclusion: Our series shows a benefit on the entero-entero anastomosis staples line reinforcement on the LGB with suture wich prevented the digestive bleeding and without a significant raise of the surgical time.

P.314 Laparoscopic Gastric Bypass Internal Hernia Prevention

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Introduction: Internal hernias are the most frequent cause of intestinal obstruction on patients put through a laparoscopic gastric bypass (LGB) and they can have a fatal ending if these are not noticed in time. Laparoscopic surgery limits the formation of adherence and helps the free movility of the intestinal limbs and the possibility of their movement through the hernia holes created by the surgery itself. The potential spaces include: the transverse mesocolon flaw on the retrocolic technique, the Petersen space and the mesenteric flaw of the entero-enterostomy. The hernia incidence of: Petersen oscilates between a 1-9%, of the mesenteric space until a 21% and the trans mesocolic until a 67%. Our group compares two types of mesenteric gaps' closure, and our hypothesis is founded on the idea that the technique used on the closures, is the most important factor on this pathology occurrence.

Method: Data from 158 consecutive patients was gathered, operated between august 2007 until January 2009, with at least 24 post operative months and were analyzed in a retrospective manner. An antecolic LGB was performed in all patients, with a biliopancreatic diversion of 50 cms and an alimentary diversion of 150 cms. On the first group (n: 72) a separated suture of polyester 2–0 (Ethibond, Ethicon) was used for both gaps closure. On the second group (n: 86) a continuous silk suture (Mersilk, Ethicon) was used from Petersen's space base to the transverse colon and a continuous suture with the same material for the intermesenteric gap. The statistics analysis was descriptive.

Results: The groups did not show significative difference regarding weight, height, body mass index, post operative weight loss, diversion length and gender. On the first group, the Petersen hernia incidence was 8,3 % (6 patients) and on the intermesenteric gap of 2,7% (2 patients); intestinal resection because of necrosis was performed in only one patient; all cases happened after 12 months of LGB. On the second group there was no internal hernia development. There was no mortality on the series.

Conclusion: The meseteric spaces surgically created must be always closed. The technique and the suture material are critical factors. We recommend to use continuous suture with non-absorbable materials like silk.

P.315 Experience of Bariatric Center After 1300 Cases

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Introduction: Obesity is a public health problem and the only effective treatment for this pathology is bariatric surgery. The number of surgeries performed in Brazil grows exponentially, which make this subject increasingly studied between referral centers.

Objective: To study the outcomes of morbidly obese patients undergoing bariatric surgery at a referral bariatric center.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by surgeons of CTO from 2002 to 2012.

Discussion: Initially the bariatric surgery was performed by open approach and later on, with increasing surgical experience, it became to be performed laparoscopically, which showed better results for the shorter hospital stay and better postoperative recovery of the patient. The technique of choice should be individualized to each case, considering the obesity severity and comorbidities of each patient. Along the learning curve of the 1300 cases, it is observed that the Roux-en-Y Gastric Bypass remains the foremost used technique, followed by the Sleeve Gastrectomy. The learning curve is a determining factor in the results of this therapy, decreasing operative time, complications and hospitalization.

Conclusion: Bariatric surgery is the only effective treatment for obesity. This treatment involves complex techniques developed in patients at high surgical risk and should be performed only in bariatric centers by qualified surgeons.

P.316 Long or Very Long-Limb Gastric Bypass in Superobese

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Background: The optimal surgical treatment for super-obese (BMI 50 kg/m (2)) patients is still a matter of debate. In most cases the standard Roux-en-Y gastric bypass (RYGB) is done despite. The effect of alimentary limb-length on weight loss after RYGB in super-obese patients is controversial. The aim of this multicenter randomized controlled study within the frame of EOA cooperation is to compare the long-term weight loss and resolution of co-morbidities of long limb RYGB (LL-RYGB) and very long limb RYGB (VLL-RYGB) gastric bypass in patients with BMI 50 kg/m(2).

Methods: During the period 2008.06 2011.12 158 patients with BMI 50 kg/m (2) were randomized either to LL-RYGB (n=83, Roux limb=150 cm) or VLL-RYGB (n=75, Roux limb=250 cm). In both groups biliopancreatic limb was 50–75 cm. The percentage of excess weight loss (%EWL) and resolution of co-morbidities were measured at 1-, 2-, 3- and 4-year follow-up. Statistical comparisons were performed using t-test and chi square test.

Results: Groups were well matched according to patient demographics, pre-operative BMI (55.1 SD=4.06 vs. 54.5 SD=4.34 kg/m(2)), and co-morbidities. Follow-up rates of the patients who reached 1-, 2-, 3- and 4-years after surgery were 91.8% (n=158), 87.3% (n=134), 55.4% (n=99)

and 66.6% (n=36). There was no statistical difference in %EWL at 1, 2, 3 and 4 years between the two groups (54.1 vs. 57.9 (p=0.208), 61.4 vs. 62.4 (p=0.784), 60.6 vs. 65.0 (p=0.425) and 55.1 vs. 54.5 (p=0.863)). The resolution of co-morbidities was similar in the two groups.

Conclusion: VLL-RYGB do not result in higher weight loss or better resolution of co-morbidities as compared to standard RYGB.

P.317 Laparoscopic Roux-En-Y Gastric Bypass for Morbid Obesity Using a Modified Retrocolic Supracolic Approach: The Outcomes of 284 Consecutive Patients

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Introduction: Ante-colic ant-gastric and retro-colic retro-gastric techniques for anastomosis of the roux limb and gastric pouch are most commonly used approaches in laparoscopic Roux-en-Y gastric bypass surgery (LRYGB). We report our operative outcome data from a consecutive single-surgeon series of LRYGB performed using a modified retrocolic supracolic approach (MRSa).

Materials and Methods: Retrospective analysis of a prospectively maintained database of 284 consecutive patients underwent LRYGB using MRSa (a modification of that performed by Kelvin Higa) utilizing a 30 cm biliary limb and a 100 cm Roux limb between September 2009 and February 2013. Data included operative outcomes, percentage excess weight loss (EWL) and diabetic remission at follow-up.

Results: All 284 patients (207 female) underwent attempted LRYGB using the MRSa. Median \pm IQR age, weight and body mass index (BMI) at initial consultation were 48 \pm 10 years, 147 \pm 12 kg, and 53 \pm 6 kg/m², respectively. In 7 patients, this approach was deemed impossible due to short and thick colonic mesentery, therefore ante-colic approach was performed instead. There were only 3 (<1%) anastomotic leaks with no postoperative mortality. There were 10 re-operations for postoperative bleeding (2 patients), repair of internal hernia (3 patients) and leak/drainage of an intra-abdominal collection (5 patients). Median hospital stay was 2 days. Post-operative dysphagia requiring endoscopic balloon dilatation occurred in 16 (5.3 %) patients. At postoperative follow-up interval of 11–15 months, there was significant EWL of 70.38 \pm 12 %. Nearly 60% of patients with diabetes (Diet controlled DM excluded) had complete remission or reduced use of anti-diabetic medications.

Conclusion: With excellent EWL, diabetes control, and very low complications rates, our results demonstrate that LRYGB using MRSa is both safe and feasible.

P.318 Roux-y-Gastric Bypass After Failed Gastric Banding: Effective but with High Morbidity

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Introduction: The failure rate following laparoscopic adjustable gastric band (LAGB) is high approaching 50%. The optimal revisional operation is controversial.

Methods: This was a retrospective review of a prospectively held bariatric surgical database of one surgeon (BYS). Records of Roux-y-gastric bypass (RYGB) following failed LAGB from March 2006 to February 2013 were reviewed.

Results: Forty-Six patients, (30 females and 16 males) with an average age of 41(24–65) underwent RYGB (1 open (planned), 45 laparoscopic). The mean weight and BMI prior to LAGB was 132 kg (95–170) and 46.9 kg/m² (34.0–

64.1) respectively. Prior to RYGB the mean weight and BMI was 121 Kg (84–156 kg) and 42.87 kg/m² (28.5-60.9 Kg/m²) respectively. The LAGB was explanted before the RYGB in twenty-eight patients (61%) and eleven at the time of revision (39%). Reasons behind removal/revision were unsatisfactory weight loss (34 patients, 74%), band slippage (6 patients, 13%) and erosion (13 patients, 14%). None of the laparoscopic cases were converted to open. Average operative time was 240 minutes (80–540 minutes). There were no mortalities; however eight patients (17%) experienced immediate post-operative complications (Clavien II (2), IIIa (3) and IIIb (3)). Late complications developed in five patients (11%) including incisional hernias (3) and internal hernias (2). Percent excess weight loss at 12, 24 and 36 months 68%, 66% and 65% with an average follow up of 70%.

Conclusion: RYGB revision after failed LAGB is effective in achieving weight loss goals. Complications and operative times are higher than in primary RYGB.

P.319 Preliminary Results of the ELEGANCE Trial: A Prospective Randomized Controlled Trial for the Effect of Long Biliopancreatic Limb Length in Laparoscopic Roux-en-Y Gastric Bypass

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Introduction: Roux-en-Y Gastric Bypass (RYGB) is one of the most performed bariatric procedures over the world. However, an uniform limb length for optimal weight reduction is still lacking. The objective of the present study was to compare the effect of Long Biliopancreatic Limb (LBPL-) RYGB and Standard (S-) RYGB in morbid obese patients.

Method: Between July 2012 and March 2013, in total 140 morbid obese patients who underwent a primary RYGB were randomized for LBPL-RYGB or S-RYGB. Roux/ Biliopancreatic limb of 75/150 cm vs. 150/75 cm were measured for LBPL-RYGB and S-RYGB, respectively. Primary outcome was percentage Excess Weight Loss (%EWL). Patients were blinded for type of operation.

Results: In total 103 patients (44 LBPL- and 59 S-RYGB) reached the median follow-up period of 12 weeks [6–24 weeks]. Mean age (42.5 vs. 46.1 yrs), sex (86% female), weight (129.2 vs. 131.2 kg), and BMI (44.3 vs. 44.9 kg/m²) were similar for LBPL- and S-RYGB, respectively (p<0.05). %EWL after 6, 12 and 24 weeks were 23.9 vs. 24.5% (p=0.74), 40.7 vs. 41.3% (p=0.81), and 61.7 vs. 52.2% (p=0.14) for LBPL- and S-RYGB, respectively. Four patients needed a relaparoscopy in S-RYGB compared to 1 patient in LBPL-RYGB. In S-RYGB 1 patient died due to multi-organ failure, compared to no mortality in LBPL-RYGB. On IFSO 2013, these results will be updated for longer follow-up period.

Conclusion: On the short term, primary LBPL-RYGB was safe and resulted in higher %EWL than S-RYGB. Results on the long term should corroborate these findings.

P.320 Primary and Secondary Banded Gastric Bypass - What Could Be Achieved?

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The gastric bypass is the gold standard of bariatric surgery. Nevertheless some patients show insufficient weight loss or weight regain. Dilatation of the pouch or the pouch outlet may be the cause. The banded gastric bypass tries to overcome dilatation by placing an implant around the pouch or pouch outlet.

In this study we describe our results using the GaBP ring system in banded gastric bypass operations by primary and revisionary operations in 3 bariatric centres.

Patients and methods: 183 patients in 3 bariatric reference centres received a banded gastric bypass operation using the GaBP ring system. The 18 Patients became the secondary Stomach Pouch Reduction and Ring implantation. Both groups were evaluated including weight loss and complications.

Results: Mean EWL after 6 Months was 60% with a mean BMI of 30.1 kg/m². After one year mean EWL reached 75.3 % with a mean BMI of 27 kg/m². Then we noticed the differences: gaining weight by patients with after the conventional Bypass. In the following years a further weight loss was seen with a mean EWL of 85% after 4 years after Banded Bypass and similar EWL level by secondary operated patients with BRYGB equal of 81%. In the perioperative and early postoperative period there was a low complication rate (4.3%). There was only one case of implant related complications.

Conclusion: Banded gastric bypass using the GaBP or Minimizer ring system allows good weight loss with no regain of weight in a four year follow up. The complication rate is low. The secondary ring implantation leads to weight reduction.

P.321 Technical Aspects of a Hand Sutured Gastrojejunostomy During Laparoscopic Gastric Bypass: 1843 Cases Without Leak

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Aim of this presentation is to communicate our series of 1843 consecutive laparoscopic gastric bypasses done at a teaching center without any leak from the gastro-jejunostomy and to highlight the fact that both teaching and good results in bariatric surgery can go hand in hand.

This is a retrospective analysis of prospectively maintained data from a tertiary care center. Data was analyzed from January 2001 till December 2012. Redo cases, sleeve gastrectomies, lap band placement and biliopancreatic diversions were excluded. All cases were done by four bariatric surgeons and by fellowship trainees under their guidance.

Our technique in creation of the gastrojejunostomy is a four layered hand sutured gastrojejunostomy sized over an 18 French nasogastric tube. We bring our roux limb up in a retro-colic retro gastric transmesocolic route. The nasogastric tube is removed after intraoperative testing of the anastomosis by injecting air through the tube while compressing the jejunum. A gastrografen upper-gastrointestinal series was also performed in all patients on the morning of postoperative day 1, and then the patient was started on a liquid diet. Care is taken to ensure that there is no tension at the anastomosis, or narrowing at the transmesocolic or jejunojejunostomy and to maintain good blood supply. 1843 cases were attempted laparoscopically in this period. We converted 3 cases from laparoscopic to open (2 due to extensive adhesions and one due to lack of working space). 81 of these gastrojejunostomy were done with Da Vinci robotic assistance while the rest were done by hand sutured technique. BMI of patients ranged from 35 to 90 kg/m² (average BMI 47.9 kg/m²) and age from 16 to 75 years (mean 41,2 years), length of stay was 2.9 days. There were three mortalities in this period (one in a patient with arrhythmias who threw an emboli to the small bowel, one with pulmonary embolism at about 27 days after surgery, and third with aspiration pneumonia at about 29 days). Three patients developed a leak from the staple-line in the divided gastric pouch (0.16%). During the study period, 8 patients were diagnosed with an anastomotic stricture (0.004%), and were all corrected with endoscopic dilation. Marginal ulcer and wound infection rates are both under 1%. Average length of stay was 2.7 days. 30 day readmission rate was 6.9% while 90 day readmission rate was 9.3%. Majority of the gastrojejunostomy were done by the fellows while being actively supervised by the attending surgeons.

Though technically challenging, hand sutured gastrojejunostomy seems to have excellent results and is a technique which can be learned by fellows during training under close supervision.

P.322 Glycated Hemoglobin and Triglycerides: Predictive Factors of Metabolic Syndrome Persistence One Year After Gastric Bypass

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Aim: To determine predictive factors of metabolic syndrome persistence one year after Gastric Bypass (LRYGBP).

Methods: Anthropometric and biological data about 141 patients operated in digestive surgery department between 2004 and 2010 were prospectively collected before and one year after LRYGBP. Parameters of patients with metabolic syndrome at one year (n = 15) were compared with those of patients with no metabolic syndrome (n = 126). A logistic regression was realized to determine independent factors significantly associated with persistence of metabolic syndrome. Diagnostic relevance of parameters associated with presence of metabolic syndrome was analyzed.

Results: 141 patients were analyzed (women 89% ; BMI 44.6+5.4kg/m² ; age 40.3+9.8 years). Parameters associated with metabolic syndrome persistence were: age (p = 0.15), sex (p = 0.03), GGT (p = 0.000005), glycemia (p = 0.00007), glycosylated haemoglobin (p < 0.0000001), triglycerides (p < 0.0000001) and metabolic syndrome before LRYGBP (p = 0.002). Independent factors associated with persistence of metabolic syndrome one year after LRYGBP were glycosylated haemoglobin (p = 0.038) and triglycerides rate (p = 0.036). Triglycerides rate of 2.14 mmol/l and glycosylated haemoglobin rate of 6.6% are sensitive (85.7% and 79% respectively) and specific (79% and 85% respectively) to prognosticate metabolic syndrome one year after LRYGBP.

Conclusion: Glycosylated haemoglobin and triglycerides are predictive of metabolic syndrome persistence one year after LRYGBP. Metabolic complications of obesity must be followed up for a long time.

P.323 Four-month Follow-up After Roux-en-Y Gastric Bypass in Obesity Porcine Model with Hyperlipidemia

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Introduction: Morbid obesity is associated with significant co-morbid illnesses and mortality. Hyperlipidemia is strongly associated with atherosclerosis and cardiovascular disease. As treatment, laparoscopic Roux-in-Y gastric bypass (LRYGB) is a proven and effective procedure for the morbid obesity and its related co-morbid illnesses. In a randomized study, our purpose is to observe the relationship between the analytical lipid profile after and before the surgery for treatment of obesity and associated diseases in porcine animal model.

Method: We used eleven male Gottingen Minipigs, for the creation of a metabolic syndrome animal model nourished with hypercaloric feed during 9 months. Lipid profile (HDL, LDL and triglycerides) were obtained at basal levels in the porcine model (saturated fat rich diet) and after LRYGB as treatment of obesity. The surgery consisted in procedures that limit the gastric reservoir capacity by the creation of a 20 ml stapled gastric pouch. The pouch was connected through an anastomosis to a 40-cm Roux-en-Y jejunal limb, and finally, the biliopancreatic limb was created with 100 cm of length.

Results: Four-month follow-up of the patient showed lipid profile approached normal ranges with gastric bypass.

Conclusion: Diet-induced hypercholesterolemia produces Hyperlipidemia and other damages, reflected on biochemical analysis. Laparoscopic Roux-en-Y gastric bypass may be a good option for the patient who has morbid obesity and medically refractory hyperlipidemia.

P.324 Comparison of Short- Versus Long-Limb Gastric Bypass

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Introduction: Bariatric surgery currently represents the only long-term effective treatment in cases of morbid obesity. Roux en Y gastric bypass offers significant long-term results; such as weight loss, co-morbidity control, acceptable complication rate and satisfying postoperative quality of life. The aim was to compare results of open-short limb and laparoscopic-long limb gastric.

Method: The research includes data from 199 gastric bypass surgeries performed in our institution.

From 1996 to 2001, 99 patients underwent open gastric bypass following the Torres-Oca technique with length of bypass 80–120. Starting 2008, laparoscopic gastric bypass was put in place and 100 patients underwent retrocolic antegastric bypass with length 100–250.

Results: No significant differences regarding sex and age between groups. BMI in 1st group was 51.42 and 44.36 in 2nd. Reported weight loss reached 60% and 76.6% EWL ($p=0,015$). The main complication was anastomotic leak: 6 and 3% ($p=0,3$). In both groups we registered evisceration, haemorrhage, intestinal obstruction and incisional hernia.

Mortality reached 1.35% and 1% respectively. 22.2% of patients had to undergo reintervention because of fail of weight loss in 1st group and none in 2nd group ($p<0,0001$). Improvement and resolution of comorbidities comparable in both groups.

Conclusion: Gastric bypass is a complex technique with acceptable complication rate, long-term weight loss and comorbidity resolution. Bypass length has a significant influence and is one of the main factors of weight loss.

P.325 One Stage Laparoscopic Gastric Bypass in Super- Supermorbid Obese Patients

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Introduction: Because of the high rate of postoperative morbidity and mortality after bariatric surgery among patients with BMI higher than 59 kg/m², ten years ago was proposed to perform bariatric operations in two stages, firstly a sleeve gastrectomy and, after a period of time, a biliopancreatic or gastric bypass. Nevertheless, there are not conclusive studies about the advantages of this approach for the patients.

Methods: Since June 1999 until December 2011, 1599 patients have been operated on for morbid obesity, all of them with one stage laparoscopic banded gastric bypass (LBGB). Forty nine patients (3.3%) had BMI higher than 59. Mean age 37.5 years-old, 60% women. Mean BMI 64.3. Major comorbidities: 2.7/patient. Hypertension 47%, type 2 diabetes mellitus 24.5%, sleep apnoea 37%, osteoarthritis 80%, hyperlipidemia 31%. Mean follow-up 7.3 years.

Results: Operation time: 164 min. No conversions. Hospital stay: 3.5 days. Postoperative complications: one gastric pouch leak (1.9%), treated conservatively, and one urinary tract infection. No mortality. Long term complications: 3 reinterventions (incarcerated umbilical hernia, silastic ring removal (stenosis), perforated marginal ulcer), one dilatation for stenosis, one marginal ulcer. Weight loss evolution at 3, 12, 24, 36, 60 and 84 months.- %EWL: 35, 60, 74, 67, 58, 61. BMI: 50, 42, 34, 37, 41, 40. Comorbidities remission/improvement.- Hypertension 61%/17%, diabetes 92%/8%, hyperlipidemia 75%/8%, osteoarthritis 100%, sleep apnoea 100% .

Conclusions: Super-supermorbid obese patients can be operated on with a one stage LBGB with low morbimortality and with very satisfactory weight loss and improvement of comorbidities, similar to morbid obese patients.

P.326 A Comparative Study Between Sleeve Gastrectomy with Jejunal Bypass (SGJB) and Roux-en-Y Gastric Bypass (RYGB) for the Treatment of Morbid Obesity

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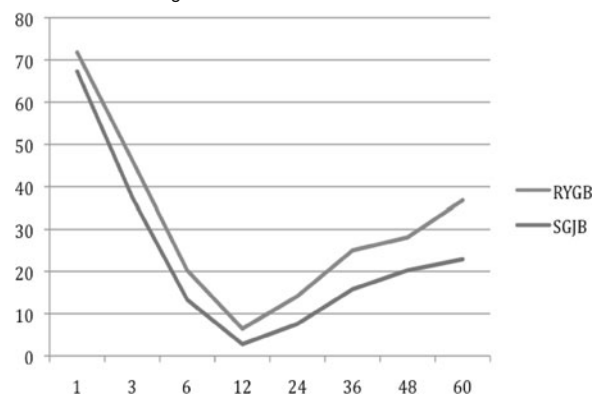
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Introduction: Sleeve Gastrectomy with Jejunal Bypass (SGJB) is performed in our institution since 2004 for the treatment of obese patients. This technique has shown acceptable results in terms of weight loss and improvement of comorbidities, with acceptable morbidity. The main objective of this study is to compare SGJB with RYGB.

Method: Retrospective case series from a prospective database. where two different surgical teams performed either RYGB or SGJB. All patients with a preoperative BMI 30 kg/m² were included. Analysis of weight loss and comorbidities was made with descriptive statistics, t-test, and fisher exact test depending on the variable.

Results: 455 patients underwent SGJB and 135 RYGB. Patients were similar on age, and associated comorbidities, but differed in male/female rate, and preoperative BMI (37.9 kg/m² in SGJB versus 40.2 kg/m² in RYGB, $p=0.0013$). Surgical time was 124 min in SGJB and 132 in RYGB ($p < 0.0001$), hospital postoperative stay was 3.1 days en SGJB and 3.8 in RYGB ($p = 0.1$). The EWL at 5 years was 77.1% with SGJB and 63.2% with RYGB ($p = 0.156$). Improvement of hypertension was better in the SGJB group (91% vs 70% $p 0.008$), insulin resistance did not show significant difference, but type 2 diabetes showed 86% of improvement with SGJB and 71.4% in RYGB ($p = 0.011$), and dyslipidemia 97% vs 84% respectively ($p=0.043$). Morbidity didn't showed significant difference.

Conclusion: Despite the study limitations, we think that SGJB is at least comparable with RYGB, with a tendency of the SGJB to achieve better results in terms of excess weight loss and comorbidities resolution.



P.327 Single Stage LRYGB in the Super-Super Obese Group

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Background: Laparoscopic Roux en Y gastric bypass (LRYGB) is one of the widely accepted, safe and effective bariatric procedures. However, it is perceived to be associated with high morbidity and mortality in the super-super obese patient population if performed as a primary single-stage procedure. We present our experience of LRYGB performed as the primary single-stage procedure in the super-super obese population. **Methods:** Prospectively collected data of patients above BMI 60 who underwent primary single-stage LRYGB was analysed retrospectively in terms of demographics, co-morbidities, follow-up period, excess weight loss (EWL), resolution of co-morbidities, length of stay (LOS), leak rate, long term surgical complications and nutritional deficiencies.

Results: A total of 25 patients with BMI above 60 underwent primary LRYGB. The mean BMI was 61.8 (range 60–69.1). The mean age was 43 years (range 30–62). The male: female ratio was 1:7.3. The mean pre-operative weight was 166.4kg (range 134.8–203.6). The median OS-MRS was 2. The average LOS was 3 nights. The leak and mortality rates were 0%. Post-operative follow-up ranged from 9 to 72 months (mean 21.8). The mean EWL was 67.2% (range 14.4 to 93.6). 72% (18) of patients achieved a BMI below 40. 3 patients (12%) developed Gastrojejunal anastomotic stenosis requiring endoscopic dilatation. 2 patients required laparoscopy and repair of Petersen's hernia for chronic abdominal pain.

Diabetes resolution occurred in all 3 diabetic patients. Hypertension resolved in 1 and improved in 8 out of 9 patients. Obstructive sleep apnoea resolved in 1 and improved in 2 out of 3 patients. Vitamin B12, Folate, Iron, Zinc and Vitamin D deficiencies occurred in 9(36%), 7 (28%), 8(32%), 1(4%) and 6(24%) patients respectively.

Conclusion: Primary single-stage LRYGB is safe and feasible in a carefully selected cohort of super-super obese patient population with acceptable morbidity. BMI above 60 alone should not be considered as an absolute contraindication.

P.328 Metabolic Syndrome and Gastric Bypass: Insights on the Development and prediction of cure (Metabolic Score)

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Introduction: The metabolic syndrome (MetS) clusters the most dangerous cardiovascular disease risk factors. The factors that determine its development and ultimate resolution after Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) are not fully understood.

Methods: Prospective cohort of 210 consecutive patients after LRYGB between January 2010 and June 2011. Patients were evaluated pre-operatively and at 12 months for clinical characteristics, biochemical profile and adipose tissue samples were collected at surgical intervention. We tried to identify predictors for the development of metabolic syndrome in morbidly obese and predictors of its resolution after LRYGB.

Results: Increasing age (>40), male sex, ALT levels and VAT/SCAT adipocyte size ratio were independently related to the expression of MetS. One year after LRYGB, there was a significant decrease in the prevalence of MetS (63.3% to 10%; p<.001) and individually in each of its components. A multivariable analysis for the resolution of MetS identified that only fasting glucose levels (OR=13.4;p=.01) and duration of obesity (OR=1.08;p=.04) were independently related with the persistence of MetS. A metabolic score, consisting of duration of obesity, fasting glucose levels, the presence of high blood pressure and low HDL (Scale of 1 to 10) identified 3 different risk categories for the persistence of MetS (AUC = 0.848).

Conclusions: The metabolic score can be used to predict the resolution of metabolic syndrome after gastric bypass with high accuracy. Patients in high-

risk groups might be managed more aggressively and low risk patients may have their medication discontinued earlier with extra safety.

P.329 Magnetic Resonance Evaluation of Body Composition in Obese Gottingen Minipigs

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Introduction: Obesity is characterized by abnormal and excessive accumulation of lipids resulting from a chronic imbalance between energy intake and energy expenditure. As the prevalence of obesity and its comorbidities continue to rise worldwide, robust imaging techniques and accurate post-processing strategies are critically needed to accurately quantify the distribution of fat. Magnetic resonance imaging (MRI) techniques can decompose the image signal into its fat and water signal components. Moreover, MRI has previously been used to quantify intraabdominal, retroperitoneal and subcutaneous fat deposits.

Method: In this study, MRI was used to define fat-distribution patterns in 13 obese males, fed with hypercaloric diet during 9 months in order to create an obesity experimental animal model. MRI values of visceral, subcutaneous and retroperitoneal abdominal adipose tissue were obtained by manually drawing the region of interest corresponding to each of the images obtained at the levels of T11, T13, L1, L3, L5, by two experienced radiologists. The MRI was performed on the sedated animal placed in supine position. Fat volumes were determined at basal levels (T0), after 9 month nutrition with saturated fat rich diet (T1), and after laparoscopic Roux-en-Y gastric bypass as treatment for obesity and associated comorbidities (T2).

Results: The MRI data showed correlation with body weight, abdominal perimeter and anatomical measurements with increased body weight and added amount of adipose tissue. Statistically significant differences were observed between T0 and T1 fat volumes (p <0, 05). T2 volumes were reduced compared to T1 determined values, without statistical significance.

Conclusions: A precise evaluation of the adipose compartments in minipigs was obtained by MRI. Therefore, the use of Gottingen minipig animal models is advised to further investigate the relationship between the different adipose tissue deposits and obesity.

P.330 Routine Use of Upper GI Endoscopy for Optimizing the Outcome of Laparoscopic Vertical Sleeve Gastrectomy

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Background: Obesity is the modern world epidemic. Laparoscopic vertical sleeve gastrectomy (LVSG) is considered to be a safe and effective option for the treatment of a morbidly obese patient. Traditionally a 36 F bougie is used to create a stomach tube which is relatively a blind procedure. The aim of our study was to find out whether the routine use of an upper GI endoscope intra-operatively optimizes the outcome of LVSG and its added benefit in terms of better weight loss.

Material & Method: Study period- June 2008 to July 2012 Number of patients enrolled (n) 300 Duration of Follow up 18 months Standard procedure was followed as per our protocol. A 28 F upper GI endoscope was used for creating the gastric tube. Follow-up period 18 months.

Results: We achieved up to 70-80% of excess body weight loss at the end of 18 months following surgery which significantly better as compared to other studies in literature. There was no incidence of stricture, dysphagia, reoperation and any significant staple line bleed. One patient had post-op leak which was successfully

managed laparoscopically. Intra-operative UGI endoscopy was also helpful in visualizing intra luminal staple line for any potential bleed.

Conclusions: Routine use of upper GI endoscopy in LVSG may be adapted as a method for creating gastric tube with better weight loss and no increase in morbidity.

P.331 Laparoscopic Re-Sleeve Gastrectomy as a Treatment of Weight Regain After Sleeve

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) is a common bariatric procedure. Weight regain after a long-term follow-up is reported. We propose Laparoscopic Re-Sleeve Gastrectomy (LRSg) as a treatment of weight regain after LSG.

Method: Patients were considered for LRSg when we observed progressive weight regain associated with evidence of persistence of gastric fundus and/or antrum on upper gastrointestinal series. Follow-up visits were scheduled at 1, 3, 6 and 12 months after surgery and every 6 months thereafter. Measures of change from baseline at different time were analyzed with the paired samples *t* test.

Results: We observed progressive weight regain after LSG in 11 over 201 patients (5,4%) who had a mean follow-up of 21.1±9.7 months (range 6–57 months). 3 patients started to regain weight after 6 months since LSG, 5 patients after 12 months, 3 patients after 18 months. LRSg was completed laparoscopically in all cases, nor intraoperative nor postoperative complications occurred. After 1 year follow-up we observed a significant ($p<0.05$) mean BMI reduction (6.6±2.7 kg/m²) and mean EWL% increase (+31.0±15.8 %).

Conclusion: LRSg is a feasible and effective intervention to correct weight regain after LSG.

P.332 Partially Reversible Sleeve Gastrectomy

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Introduction: With short time the Gastric sleeve is considered the most popular procedure done in the world. The technique is standardized with slight modifications regarding the size of the calibration tube and the distance from the pylorus. Also the distance from GE junction has created a discrepancy between surgeons. The theory of the ghrelin hormone responsible of the hunger feeling and located in the fundus has many defensors among Bariatric Surgeons being mandatory to resect that part.

Method: I did 150 cases till now of this technique. Having experience in Gastric Plication (LGCP) I found useful to avoid cutting the antrum and conserve the innervations of this vital part of the stomach. It was easy to start reducing the antrum just near the pylorus (at 2 cm).

Results: With this technique I found an important improvement and drop in nausea and vomiting symptoms with better evacuating function of the stomach. The size of the stomach decreased.

Conclusion: more studies are needed to understand the function of the stomach after using this technique where partial reversibility is a fact.

P.333 Long Terms Results of Laparoscopic Sleeve Gastrectomy

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Background: In 2011, Laparoscopic Sleeve Gastrectomy (LSG) has been the most common bariatric procedure in France (13500 LSG/ 30000 procedures). The first LSG has been performed in our bariatric center in 2005. Since, our

team has performed more than 1400 LSG. We described in this study the long terms results of LSG.

Methods: Between March2005-March2008, 136 consecutive morbid obese patients underwent LSG after multidisciplinary evaluation. We used a 36F tube to calibrate the stomach before transection at 6 cm from pylorus. Dissection of the posterior gastrophrenic ligament in order to see the lower part of the left crus, before the beginning of the transection, was systematically done. Data were collected in a prospective database. Excess weight loss, excess BMI lost and morbidity have been analyzed at 3 and 5 years.

Results: The mean BMI of the patient was 47,52 kg/m². The percentage of superobese was 28%. One third of patients has undergone a previous bariatric procedure. The mortality rate was nil as the conversion rate. Morbidity was represented by 2 leakages(1,4%), 2 hemorrhages(1,4%), 5 umbilical hernia(3,5%), 7 cases of cholecystitis(4,9%). GERD was treated by PPI in 34,5% of patient. However preoperative rate of GERD was 33%.EWL and EBML were respectively 67,48 % and 66,67 % at 5 years (45 patients). The Reinhold score was good or excellent in 73,3% of patients at 5 years.

Conclusion: LSG seems to be an effective procedure in the long term follow up. An accurate technique with extended fundus resection is needed to maintain weight loss in time.

P.334 Outcomes of Laparoscopic Sleeve Gastrectomy in Patients Older than 60 Years

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Introduction: Morbidity and mortality following laparoscopic sleeve gastrectomy (LSG) occur at acceptable rates, but its safety and efficacy in the elderly are unknown.

Methods: A retrospective review was performed of all patients aged >60 years who underwent LSG from 2008 to 2012. These patients were 1:2 matched, by gender and body mass index (BMI) to young patients, 18<AGE

Results: 52 morbid obese patients older than 60 underwent LSG (mean age, 62.9±0.3 years). These were matched to 104 young patients (mean age, 35.7±0.8 years). Groups did not differ in male gender (44% vs. 43%, $p=0.9$), preoperative BMI (42.6 ±0.7 vs. 42.6±0.6, $p=0.97$), and length of follow up (17±2 vs. 22±1.4 months, $p=0.06$). Obesity related comorbidities were significantly higher in the older group (96% vs. 65%, $p<0.001$). Excess weight loss (EWL) was higher in the younger group (75±2.4% vs. 62 ±3%, $p=0.001$). Older patients had a significantly higher rate of a concurrent hiatal hernia repair (23% vs. 1.9%, $p<0.001$). Overall postoperative complication rate was higher in the older group (25% vs. 4.8%, $p<0.001$). This included, atrial fibrillation (9.5%), urinary tract infection (7%), trocar site hernia (4%), dysphagia, surgical site infection, bleeding, bowel obstruction, colitis, and nutritional deficiency (2%, each). No perioperative mortality occurred. Comorbidity resolution or improvement was comparable between groups (88% vs. 80%, $p=0.13$)

Conclusions: LSG is safe and very efficient in patients aged>60, despite higher rates of preoperative comorbidities.

P.335 Resolution of Diabetes Mellitus (Type 2) After Sleeve Gastrectomy in Different BMI Groups

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Introduction: Sleeve Gastrectomy role is proved in weight loss and this study is to evaluate efficacy in resolution of Diabetes mellitus.

Methods: 437 patients underwent Bariatric surgery out of which 101 diabetics from August 2007 to December 2012. Male 50 (49.51%) female 51(50.49%), age 19 to 71, mean age 42.88 years. 19–20, 3 (2.97%) 21–30, 8 (7.92%) 31–40, 33

(32.67%) 41–50, 31 (30.69%) 51–60 years 21 (20.77%) above 60 5 (4.95%). BMI lowest 26.7, highest 62, mean BMI 43.94. BMI range 25–30, 2 (1.98%) 30.1–35, 7 (6.9%) 35.1–40, 29(28.71%), 40.1 – 45 24 (23.76%), 45.1 – 50 15(14.85%), above 50 24(23.76%). Duration of DM ranged one week to 25 years, mean diabetic duration 14.25 years. Medication received before procedure oral 64 (63.36%), insulin 7(6.93%), both 24 (23.76%), no medication 6 (5.94%). DM work up consisted of FBS, PLBS, HBA1C, C -Peptide levels, Fasting Serum insulin. Underwent laparoscopic sleeve gastrectomy (99), 1 gastric bypass, 1 minigastric bypass. Hospitalization ranged from 36 to 48 hours with no mortality. All patients followed up after 1 week, one month, 3, 6 and 12 months and yearly. **Results:** Diabetes resolution (no medication) occurred in 71 (74.74%), reduced medication 13(13.68%), no response 3 (3.15%) and 8 (8.42%) lost for follow up. **Conclusion:** Diabetes resolution after Sleeve Gastrectomy is on par with Gastric bypass and even sleeve with Ileal transposition and resolution started immediately after procedure and most of resolution occurred in one month. It's effective even in BMI less than 35 and independent of weight loss.

P.336 Results of Laparoscopic Sleeve Gastrectomy for Morbid Obesity in 103 Patients

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Background: Laparoscopic sleeve gastrectomy (LSG) is a new restrictive bariatric procedure increasingly indicated in the treatment of morbid obesity worldwide, but up to now consider as an experimental procedure in Switzerland. The authors report their experience of LSG, evaluate the efficacy of this procedure on excess weight loss (EWL), and analyze the short-term outcome.

Methods: A retrospective analysis of a prospectively collected data base was conducted.

LSG was indicated for weight reduction in patients with a body mass index > 35 kg/m². Study endpoints included operative data, postoperative complications, duration of hospital stay and EWL.

Results: We identified 103 patients (62 female, 41 male) with a mean age of 44.2 (SD 11.1). Mean preoperative BMI was 45.8 (SD 7.4) kg/m². The median operating time was 120 minutes (range 60–240), no patient required conversion to laparotomy. The median duration of hospital stay was 7 days (range 4–30). Early complications were 2 staple line leaks and 2 staple line bleedings which led to reoperations. The median follow-up was 12 months (range 0–38). Mean EWL was 39.7% (SD 15.4) at 6 months and 56.2% (SD 16.5) at 12 months, 56.2% (SD 17.2) at 24 months and 52.7% (SD 6.7) at 36 months respectively. BMI < 50 had significant higher EWL than BMI > 50 with 59.8% vs. 46.2% (p < 0.05) at 12 months, 65.6% vs. 43.7% (p < 0.02) at 24 months and 59.8% vs. 46.2% (p < 0.05) at 36 months respectively.

Conclusion: LSG seems to be an effective treatment to achieve sufficient weight loss after 12 to 36 months follow-up. LSG can be used as a standalone operation to obtain weight reduction in patients with BMI < 50 kg/m² but regarding lower EWL in Patient with BMI > 50 kg/m² other outcome parameters like resolution of comorbidities and quality of life must be considered. In patients with BMI > 50 kg/m² revisional bariatric surgery might be indicated in the longterm follow up.

P.337 Treatment of Obesity and Metabolic Disorders by Laparoscopic Sleeve Gastrectomy: A Single Institution Experience with 51 Patients in Mainland China

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Introduction: Laparoscopic sleeve gastrectomy (LSG) has gained more and more attention of the surgeons in recent years. Chinese obese patients were mainly in central obesity characterized by abdominal visceral fat accumulation. The aim of this study is to investigate the safety and efficacy of the treatment of obesity and metabolic disorders by LSG for Chinese population.

Method: Between April 2007 and August 2012, LSG was performed in 51 obese patients by a single surgeon in First Affiliated Hospital of Jinan University. The patients were followed up for 6 to 64 months. Change of body weight, body mass index (BMI), waist circumference, and rate of excess weight loss (%EWL) were compared before and after surgery. Major comorbidities such as type II diabetes mellitus (T2DM), hypertension, hyperlipidemia and sleep apnea were also observed.

Results: All the 51 procedures were performed successfully without conversion to open surgery. Mean duration of operation was 72 minutes (range, 40–150 minutes), mean operation blood loss was 6mL (range, 5–20 mL), and mean postoperative hospital stay was 6.2 days (range, 4–8 days). Preoperative mean BMI was 35.14 kg/m² (28–57 kg/m²). Mean %EWL in the 12 months after surgery was 53.1±3.2%. 24 patients in the study were accompanied with obesity related comorbidities, and 22 of them (91.7%) were all cured or well improved after the surgery. 2 patients (3.9%) showed postoperative complications, 1 with anastomotic ulcer and 1 with mild anastomotic stricture. Both of them were cured with conservative treatment.

Conclusion: Treatment of obesity and metabolic disorders by LSG for Chinese population was safe and effective. Reasonable control of indications for the procedure facilitates to gain satisfactory clinical outcomes.

P.338 Does Laparoscopic Sleeve Gastrectomy Affect the Anti-reflux Mechanism?

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Introduction: Laparoscopic sleeve gastrectomy (SG) is a promising procedure for the treatment of severe obesity. The transection of the stomach is performed near His' angle and hence the lower esophageal sphincter (LES) may be affected. This could have a significant effect on postoperative gastroesophageal reflux disease (GERD).

Method: Severely obese asymptomatic patients that underwent SG were prospectively submitted to esophageal manometry and GERD evaluation preoperatively and at least six weeks postoperatively. Data reviewed included patient demographics, manometric measurements, GERD symptoms and pathology of the resected stomach. Statistical analysis was performed using the Wilcoxon sign rank test and the Pearson correlation.

Results: 12 male and 11 female patients participated in the study. Mean age and initial body mass index (BMI) were 38.52±10.9 years and 47.89±5.14 kg/m², respectively. At follow-up examination, mean excess BMI loss was 32.27±12.72%. The total and the abdominal length of the LES were significantly increased postoperatively whereas the contractions of the lower esophagus were decreased. GERD symptoms deteriorated postoperatively (p<0.009). The operating surgeon who mostly approximated His' angle resulted in an increased abdominal LES length (p<0.01), but the presence of esophageal tissue in the specimen was correlated with increased total GERD score (p<0.05).

Conclusion: SG increases the total and the abdominal length of the LES with the latter being correlated to the surgeon. However, postoperative GERD could be justified by the decreased contraction amplitude on the lower esophagus and the inclusion of esophageal tissue in the specimen. Thus stapling too close to His' angle should be done cautiously.

P.339 Reduced Incision Transumbilical Gastric Sleeve with SPIDER Surgical System

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Introduction: Several new technologies have been introduced to reduce the number of incisions used in bariatric and general surgery, including new robotic systems for single incision. This single surgeon series is an analysis of the feasibility of a novel, single incision surgical system that is a laparoscopic tool for bariatric and general surgery, the SPIDER Surgical System.

Method: An initial 12mm trocar is inserted at the umbilicus, and the 18 mm SPIDER device is inserted next to the trocar on the umbilical ring. The SPIDER device has 4 ports all contained within an 18 mm outer diameter (2 flexible instruments and 2 rigid instruments). The total incisions are limited to the umbilical ring. A 5mm bariatric scope is inserted through the SPIDER device for visualization. Two flexible graspers are inserted into the SPIDER device, and a 5mm vessel sealer is used alongside the flexible arms for gastrolysis. An articulated, bariatric length stapler is then inserted to complete the sleeve.

Results: A total of 42 sleeve gastrectomies were performed, and includes the learning curve with the device. The mean BMI was 42 (min of 38 and max of 51). The mean total operative time was 81 minutes (+/- 26 standard deviation). No intraoperative or post-op complications were observed. No cases were converted to open, and no cases required additional ports.

Conclusion: Reduced incision transumbilical gastric sleeve with the SPIDER Surgical System appears to be feasible. Further study of this novel technology is recommended.

P.340 Doctor, How Much Weight Will I Lose? A Predictive Model of Bariatric Surgery Outcomes

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Introduction: Weight loss is an essential indicator of bariatric surgery success and having the ability to determine how much weight each patient is expected to lose is extremely important for setting personalized weight loss goals. The aim of this study was to create a statistical model that was able to accurately predict the expected weight one-year after laparoscopic sleeve gastrectomy (SG).

Methods: Multivariate analysis of weight loss parameters of 152 patients submitted to SG. A generalized linear model was created using body mass index (BMI) 365 days post-surgery as the dependent variable and sex, age, pre-surgical BMI, hypertension, diabetes, dyslipidemia and sleep apnea as independent variables.

Results: Our model was found to be significantly predictive of weight loss ($F(2,152)=135.0$; $p<0.001$), showing that the predictive factors partially explain the variation of the dependent variable ($R^2=0.640$; adjusted $R^2=0.635$). Factors considered to be significant were BMI pre-surgery ($=0.742$; $p<0.001$) and age ($=0.249$; $p<0.001$) and, based on these, the equation for the model was determined with a standard error of 3.38. When controlling for BMI pre-surgery, age and gender, comorbidities did not show a significant impact on BMI one-year after surgery.

Conclusion: This model represents an important tool for pre-op assessment allowing the patient to be told what his estimate weight loss and BMI one-year after SG will be and, therefore, create a specific, individually-determined goal for weight loss. Data from prospective studies is needed to further validate current results.

P.341 SILS Sleeve Gastrectomy: Will It Soon Be the Gold Standard in Restrictive Bariatric Surgery?

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Introduction: Single Incision Laparoscopic Surgery is gaining popularity in Bariatric surgery. When performed transumbilically, the wound looks hidden with no visible scar giving the best cosmetic result. As SILS proves to be beneficial for single quadrant surgeries or surgeries along one plane, it makes Sleeve gastrectomy easier than other major surgeries. However, difficult manipulation angles and liver traction techniques makes this more complex than conventional laparoscopy. We used a novel "Hatal sling technique of liver traction and modified ergonomics to suit SILS through umbilical approach. We assessed the safety and effectiveness of our surgical technique.

Methods: We started developing this technique since October 2009. Until March 2013, 11 consecutive sleeve gastrectomies were performed, including one revision of band to sleeve, 5 super obese patients and 7 multiple procedures as well.

Results: The mean operating time was 53.2 minutes and the mean duration of post-operative stay in the hospital was 28.5 hours. There were no perioperative or post-operative complications or mortality. There was 100% patient satisfaction with the cosmetic outcome.

Conclusions: Our technique is safe and effective in Sleeve Gastrectomy. With similar outcomes to conventional laparoscopy in all aspect including time, complications, excess weight loss and added advantage of less pain, ultimate cosmesis and shorter learning curve, can potentially become the gold standard in Sleeve gastrectomy soon.

P.342 Six Years Experience with Sleeve Gastrectomy; Results of 1116 Procedures

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Introduction: The sleeve gastrectomy (SG) is increasingly being performed in Europe, displacing the gastric banding. It has evolved to a stand-alone, as well as a revisional option. The aim of this study was to evaluate the outcome of SG as a stand-alone, planned two staged or revision procedure.

Methods: Between August 2006 and December 2012, 1116 sleeve gastrectomies were performed in our institute. Data were obtained using a retrospective online data registry. Included were patients characteristics, indication for SG, operative details and complications. For evolution in weight loss and co-morbidity only those with at least one year follow-up were included ($n = 935$).

Results: The median operative time was 49 minutes, median hospital stay was 2 days. Thirty-day morbidity was 8.2%, mortality 0%. Intra-abdominal bleeding occurred in 2.6% of the cases, staple line leakage in 3.1%. One year after surgery, median excess weight loss (EWL) was 69.0%, after 2 years 68.1%. Smaller groups achieved 72.5%, 66.8% and 54.3% EWL after 3,4 and 5 years respectively. Complications were found more frequently in case of a revision. The stand-alone group achieved the highest EWL (75.2%). Total revision rate was 9.1%. In the planned two-stage group 14.6% required the second bariatric procedure.

Conclusion: A sleeve gastrectomy is a safe and effective bariatric procedure. Maximum weight loss was achieved after one year. SG following previous bariatric surgery was associated with more complications and less weight loss. So far, only 9.1% required a revision.

P.343 Revision LAGB to LSG: A Single Institution Experience – Minimal Complications and Successful Weight Loss

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Introduction: Laparoscopic sleeve gastrectomy (LSG) as a revisional procedure for patients with unsatisfactory outcomes after laparoscopic adjustable gastric band (LAGB) has yet to demonstrate safety and efficacy over the medium to long term. We aim to relate our experience at a single bariatric institution of revision of failed LAGB to LSG.

Methods: A retrospective review of a prospectively maintained database was performed. All patients who had LSG as a revisional procedure at our institution from October 2004 to Oct 2012, after an unsatisfactory result from LAGB were included. The details from the database included demographics, interval between band insertion, removal and LSG, indications for revision, post-operative complications and excess weight loss post LSG.

Results: 110 patients had LSG after an unsatisfactory LAGB at our institution since October 2004. The length of follow-up ranged from 3 months to 96 months, (mean: 28 months, median: 13 months). Ten were lost to follow-up. The mean pre-revisional BMI was 41.3.

There were 6 immediate LAGB to LSG conversions.

Most importantly, there were NO staple line leaks and NO mortalities. Complications included a pulmonary embolus and stricture. Mean maximal percentage excess weight loss was 52%. Six patients subsequently underwent additional revisional bariatric procedures.

Conclusion: Revision of LAGB to LSG can be performed very safely with no staple line leaks and no mortality. We feel that this is based on a delayed approach to almost all revisions of LSG after removal of the band. Medium term follow-up show that revision LSG can produce adequate weight loss.

P.344 Our Inverting Suture Technique to Prevent Leaks in Laparoscopic Sleeve Gastrectomy

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Introduction: Staple line leak and hemorrhage remain the most feared complications in laparoscopic sleeve gastrectomy (LSG). Here we report to performing stapled line reinforcement as a new approach that reduces the drawbacks of stapler used in LSG.

Methods: As an institution we place hand sewn sutures to invert the stapler line with vi-loc sutures after performing stapled stomach pouch. Firstly we place stitches negotiate the corner, which allows inversion of the staple line edges, continue with inverting suture technique approximately 15 cm on staple line then performed as a continuous simply over-and-over stitches incorporating the full thickness of the stomach wall. In the beginning buttressing of the staple line has been applied for 10 patients in our series. Perioperative bleeding affected one patient who we placed buttressing stitches at the distal edge of staple line resections.

Bleeding has been repaired intraoperatively. There was no leak or hemorrhage in patients we placed vi-loc stitches. Between November 2008 and March 2013, 113 patients who received LSG for morbid obesity. There were 39 males (34.5%) and 71 females (65.5%) (average age 44) The mean BMI was 41.

Results: One hundred and thirteen patients had LSG with stapled line reinforcement. There were only one major perioperative complication in patient which has been placed buttressing stitches as staple line hemorrhage and has been repaired intraoperatively.

Conclusion: In order to reduce postoperative complications staple line reinforcement with non-absorbable materials is an effective technique.

P.345 Laparoscopic Sleeve Gastrectomy in Obese Adolescents

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Background: Laparoscopic Sleeve Gastrectomy (LSG) is gaining credentials as a simple and efficient bariatric procedure with low surgical risk. Surgical treatment for morbid obesity is relatively rare in adolescents; hence few results have been accumulated so far. Herein, we report our data with adolescents after LSG surgery.

Methods: Data was prospectively collected regarding adolescent patients undergoing LSG. All patients underwent pre- and post-operative medical and professional evaluations by a multi-disciplinary team.

Results: Between the years 2006–2011, 32 adolescents underwent LSG in our center, (20 females and 12 males). Mean age was 16.75 years (14–18); mean weight was 121.88 Kg (83–178); and mean BMI 43.23 (35–54). Thirty four comorbid conditions were identified. In all patients, LSG was the primary bariatric procedure. Mean operative time was 60 minutes (45–80). There were 2 (6.25%) complications, an early staple line leak and a late acute cholecystitis. There was no mortality. Mean percent excess weight loss (%EWL) at 1, 3, 6, 9, 12, 24, 36, 48, and 60 months post-surgery was 27.9%, 41.1%, 62.6%, 79.2%, 81.7%, 71%, 75%, 102.9% and 101.6%, respectively. Comorbidities were completely resolved or improved within one year following surgery in 82.4% and 17.6%, respectively.

Conclusions: LSG is feasible and safe in morbidly obese adolescents, achieving efficient weight loss and impressive resolution of comorbidities. Further studies are required in order to evaluate the long-term results of this procedure, as well as its place among other bariatric options.

P.346 Laparoscopic Sleeve gastrectomy in Patients over 60 Years of Age

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Background: Laparoscopic sleeve gastrectomy (LSG) is an appealing option for high risk patients and is utilized for the elderly morbidly obese. We herein report the outcome of LSG in patients over 60 years old in a high-volume bariatric center.

Methods: The aim of this study was to examine the morbidity, mortality and outcome of LSG in the elderly. Between 2006 and 2012, 72 patients, 60 years or older, underwent LSG (out of 1241 – 5.8%). Data collected included patient characteristics, morbidity and mortality, length of stay (LOS) and percent excess weight loss (%EWL). All patients underwent preoperative multidisciplinary evaluation and postoperative follow-up, including medical and dietary consults and psychological cognitive behavioral treatment.

Results: Of the 72 patients, 40 were females (55.6%). The mean age and BMI were 62.3 years (range 60–72) and 43 kg/m² (range 35–57), respectively. Median operative time and LOS were 65 minutes (range 45–90) and 2 days, respectively. There were 13 concomitant operations in 11 patients: 6 cholecystectomies, 4 ventral hernia repairs and 3 hiatal hernia repairs. Early post-operative complications occurred in 4 patients (5.5%) and included bleeding, leak, pulmonary embolism, and trocar site hernia. No renal or cardiac complications were encountered. There were no mortalities. %EWL at 1, 3, 6, 9, 12 and 24 months was 23, 37, 49, 54, 57 and 51, respectively.

Conclusions: LSG performed in older patients is safe and feasible and can be performed with results comparable to those achieved in a younger population.

P.347 Concomitant Bariatric Surgery and Ventral Hernia Repair in Morbidly Obese Patients

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Introduction: The management of ventral hernias in bariatric surgery patients remains controversial. We report our experience with patients who underwent concomitant bariatric surgery and hernia repair.

Methods: Data from 54 patients was compiled. Symptomatic hernias, empty hernia defects, and those with contents that had to be reduced to complete the bariatric surgery were repaired at the same surgery. Hernias were repaired using dual mesh (DynaMesh, Aachen, Germany) after reduction of the hernia contents. The mesh was fixed to the abdominal wall using resolved tackers.

Results: 54 patients (female/male ratio 34/20) were enrolled between the years: 2007–2012. The majority of the patients (48, 88.9%) underwent laparoscopic sleeve gastrectomy, 2 had laparoscopic roux-en-y gastric bypass, 2-open roux-en-y gastric bypass and 2- laparoscopic gastric banding. 5 patients (9%) had complications: 3 leaks, 2 abdominal wall hematoma, 1 pulmonary embolism. No mesh was removed due to infection. One patient had a recurrent hernia. Surgery time was elongated by 30 minutes, compared to stand alone bariatric surgery. Average excess weight loss post-surgery was 49.9±10.3% at 6 months and 57.7±9.2% at 12 months. The total number of co-morbidities was 110, including diabetes, hypertension, hyperlipidemia and sleep apnea. At 12 month follow-up 56 (50%) were completely resolved and 42 (38%) were partially resolved.

Conclusion: Concomitant bariatric surgery and hernia repair is a safe procedure, beneficial for the patient and does not interfere with the outcome of the original bariatric surgery. The rate of complications for the combination surgery is similar to that of bariatric surgery.

P.348 LSG in Morbidly Obese patients in UAE, Sharjah Experience

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Background: Obesity remains a major health issue for individuals residing in the UAE. Laparoscopic sleeve gastrectomy has been used as an isolated bariatric operation since a few years ago by both restrictive and probably hormonal action. The aim of our study was to present our experience and results with laparoscopic sleeve gastrectomy (LSG) in morbidly obese UAE subjects at the Al Qassimi hospital in Sharjah, UAE.

Methods: From January 2008 to November 2012, 584 patients underwent LSG at the Al Qassimi hospital. A standardized operating technique was used. Our patients were not “sweet-eaters” and had no symptoms of gastroesophageal reflux disease. During the procedure, a 34 Fr tube was inserted into the stomach to ensure adequate diameter and volume reduction with 60 mm long green linear mechanical staplers. The change in total body weight, morbidity and clinical improvement in co-morbidities were studied.

Result: LSG was performed in 584 patients (418 female and 166 male). The mean age and body mass Index was 39.6 ± 9.3 years and 49.2 ± 9.8 kg/m², respectively. The mean operative time for LSG procedure was 68.7±11.8 min. The median length of hospital stay was 3 d; the minimum follow up duration was 6 months and maximum 40 months. The mean postoperative percent of excess body weight loss achieved was 84.6 ±13.0 at 1 year, 91.2± 6.9 at 2 years and 81.1 ± 13.8 at 3 years. There was 64.7% resolution in diabetes,

80.4 % resolution in hypertension and 87.4% resolution in dyslipidemia. The major complication rate was 1.9% (11 of 584), with one recorded death, 5 cases of leak (0.9%) which requiring reoperation, one case of portomesenteric thrombosis (0.2%) and 4 cases of sleeve stricture (0.7%) that required endoscopic dilation. Late complication, gall stones disease developed in 8.6% of patients and gastroesophageal reflux disease symptoms developed in 5.1% of patients within the first postoperative year but lessened over time to 2.7% at the end of 3 years.

Conclusion: LSG is a safe and effective in reduction of both weight and comorbidity in UAE patients. Long term prospective comparative study with other bariatric procedures is required.

P.349 Sleeve Gastrectomy with One Layer of Buttressing Material

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Introduction: Gastric leak and hemorrhage are the most important challenges after laparoscopic sleeve gastrectomy (SG). In order to reduce these complications, the staple line can be reinforced with buttressing material.

Objective: The aim of this report is to present our experience in the realization SG in obese patients with one layer of buttressing material in relation to bleeding, leaks, mortality and operative time.

Methods: Prospective case series of 480 patients who went to SG with one layer of buttressing material between December 2009 to December 2012 and who were followed with a specific protocol.

Results: There were 480 patients. Male: 96 patients, Female: 384 patients. Mean Age 37 (range 15 to 75) years. Mean Preoperative Weight: 98.3±15 (65–210) kg. Mean Preoperative BMI: 37 ±3.1 (range 30 to 61) Kg/m². Mean Excess Weight: 30.6±12.3 (range 12 to 95) kg. Mean OR Time 60.7±20.2 (35 to 150) min.

%EBMIL mean was 70.1 ± 24.2 (range 26.1 to 134.4)% at 6 months.

Morbidity: 9 patients (1,9%). 4 Bleeding 1 requires reoperation, 1 conversion for splenic trauma, 3 portal vein thrombosis, 1 abscess. No leaks, No mortality.

Conclusions: SG is a safe and effective treatment for obesity. The staple line reinforced with one layer of buttressing material diminish the rate of bleeding and leaks and may be less time consuming.

P.350 Mid-term Results of Sleeve Gastrectomy in Morbid Obesity Patients

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Background: Laparoscopic sleeve gastrectomy (LSG) is an innovative approach to the surgical management of morbid obesity. Weight loss may be achieved by restrictive and endocrine mechanisms. Early data suggest LSG is efficacious in the management of morbid obesity and may have an important role either as a staged or definitive procedure.

Objectives: We report our experience of LSG, evaluate the efficacy of this procedure on weight loss, and analyze the mid-term outcome.

Material and methods: This is a retrospective study on 148 morbid obese patients who underwent LSG between April 2009 and February 2012. Analyzed data included demographics, BMI, comorbidities, and surgical outcomes.

Result: Sleeve gastrectomy was performed in 148 patients and 41 men, 107 women was identified.

The mean age was 33.5 years (range 14–61) and mean preoperative weight and body mass index was 110kg(range 74–212), 39.9 kg/m²(range 28–70). Comorbidities were Diabetes (n=33), hypertension (n=37), sleep apnea (n=25), hyperlipidemia (n=43), degenerative joint disease (n=33). Mean operation time was 108min (range 45–340), Mean hospital stay was 2 days. And Complication was in 18 patients.

Mean follow up periods was 26 months. The follow up rate was 89% after 6 months, 79% in 1 year, 58% in 2 years. The percent of excess weight loss after 6 months, 1 year, 2 years were 64.1% , 77.8%, and 75.8%.

Conclusion: LSG is a safe and effective surgical procedure for the morbidly obese up to 2 years.

Although more follow up data should be needed, excess body weight loss seems to be acceptable at 2 years postoperatively.

P.351 Laparoscopic Sleeve Gastrectomy (LSG): Cohort Study with 6 Year Follow-up

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) has become an effective bariatric technique in terms of excess weight loss and improvement of comorbid conditions. We present our results of a cohort of patients with LSG and 3 to 6 year follow up (FU) in terms of weight loss and regain

Method: Retrospective cohort study. Population: patients undergoing LSG between January 2006 and December 2009 operated by our team according to an established protocol with 6 year FU. Primary endpoints: excess BMI loss (%EBMIL) and weight regain, defined as increase in BMI at least 10 % over the lowest BMI reached after surgery (%RBMI). Statistical analyses using Stata software, version 11.

Results: Of the initial 313 patient cohort, 30%, 15%, 9.2% and 12.5% of patients completed 3, 4, 5 and 6 years FU, respectively. 69.3% female, mean preoperative age 41.9 (± 11.2) years and BMI 40.7 (± 6.8 kg/m²). Main endpoints according to FU as follows: mean %EBMIL 88.1 %, 82%, 76.3%, 72%, 71% and 79 % at 1,2,3,4,5 and 6 year FU, respectively. According to weight regain: 23%, 28%, 34% and % of patients regained a mean %RBMI of 16.4%, 16.2%, 12% and 4 % at 3,4,5 and 6 year FU, respectively.

Conclusion: Our results in terms of %EBMIL and %RBMI after LSG might be compared with other published series. A more complete and longer FU is required to draw better evidence based conclusions.

P.352 Laparoscopic Sleeve Gastrectomy Using a Synthetic Bioabsorbable Staple Line Reinforcement Material: Outcomes in a 5-Year Series at a Tertiary Referral Bariatric Centre

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Introduction: The efficacy of staple line reinforcement in mitigating complications after laparoscopic sleeve gastrectomy (LSG) for morbid obesity remains unclear. We report outcomes in a series of LSGs utilising a synthetic bioabsorbable reinforcement material (GORE Seamguard Staple Line Reinforcement).

Methods: Data on 217 consecutive patients (71% women) who underwent primary (n = 201) or revision LSG between December 2007 and May 2012 were recorded prospectively. Results are expressed as mean \pm SD.

Results: The patients' mean age and BMI at enrollment were 45.7 \pm 10.3 years and 50.5 \pm 9.0 kg/m², and 51% had hypertension; 22%, type II diabetes mellitus; 29%, sleep apnoea; and 45%, joint/mobility problems. There were 5.6 \pm 1.0 staple firings/per case. Two patients (0.8%) had an intraoperative leak that resolved after suturing. Postoperatively, a complication developed in 11 patients (5%), including 4 (1.8%) who had bleeding requiring reoperation. One patient (0.5%) had a staple line leak necessitating reoperation. Hospital length of stay was 2.2 \pm 0.7 days. Nineteen patients (8.7%) were readmitted, usually because of vomiting or abdominal pain. Remission of diabetes, hypertension, and sleep apnoea

occurred in 79%, 84%, and 76% of patients, respectively (follow-up, 13.6 \pm 10 months). The estimated percentages of weight loss at 6 months and 1, 2, and 3 years were 45.8% \pm 7.9%, 50.3% \pm 21.5%, 46.6% \pm 22.8%, and 30.7% \pm 22.5%, respectively.

Conclusions: LSG using the reinforcement material was safe and associated with low rates of postoperative bleeding and staple line leaks and excellent clinical outcomes.

P.353 Comparison of TISSEEL and Gore-Seamguard Usage in Laparoscopic Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is a well-accepted treatment modality for morbid obesity. Present study aims to compare the complications and cost-effectiveness of Gore Seamguard and Tisseel for buttressing during LSG.

Methods: 100(20M) patients with a mean(range) age of 39(23–62) years who underwent LSG for morbid obesity were included. Patients were treated with either Tisseel(n=47) or Gore Seamguard (n=53) for buttressing the staple line. However, 12 patients were excluded due to debanding during surgery. Remaining 88 patients were evaluated.

Results: There were 41 patients in Tisseel and 47 patients in SeamGuard group. The mean (range) BMI was 48,6(40–64)kg/m². Mean operation time was significantly shorter in SeamGuard than Tisseel Group (51.8 vs 63.5 min). Average hospital stay was 5.8 days and patients were mostly discharged following scopic control 4 days after the procedure. Post-operative leakage occurred in two patients in Tisseel group(4.9%). Hemorrhage from staple lines occurred in one patient in Seamguard group(2.1%). There were no difference between two groups in regards of drainage volume. Cost of Seamguard is found to be approximately 4 times higher than Tisseel per patient.

Conclusions: Although the operation time was shorter in SeamGuard group, reinforcement of staple line seems effective in both groups with no difference in hospital stay, complication rate, and drainage volume. However, significant benefit obtained with use of Tisseel in material cost analysis.

P.354 Sleeve Gastrectomy as a Salvage Procedure for Failed Primary Bariatric Restrictive Surgeries

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Background: Weight regain after restrictive bariatric procedure is frequently noticed as the period of follow-up extends over the years. The objective of this presentation is to report our experience with 139 LSG cases performed to manage the weight regain in patients who has had previous primary restrictive bariatric procedures.

Methods: The data were analyzed after reviewing the prospectively maintained database of 139 patients who underwent LSG as a salvage procedure to treat the weight regain phenomenon after failure of the primary bariatric procedure.

The period of the study extends from June 2007 to Nov 2011 with a minimum follow-up period of 9 months.

Results: All the 139 patients responded favorably and lost appreciable amount of the EBW after their primary bariatric procedure. However, within a period of 3 years to 14 years those patients regained weight to the extent of being morbidly obese again. LSG was successfully performed on all the 139 patients as a salvage bariatric procedure to put them back in the right tract of excess weight loss.

There were 101 women (72.7%) and 38 men (27.3%). The mean age and BMI were 39.4 \pm 10.5 yrs (19–54 yrs) and 38.9 \pm 4.0 kg/m² (34–59.6 kg/m²) respectively.

Excess weight loss after the salvage procedure was as follows: first year 67.8%, second year 68.2% and third year 67.5%.

Complications, early and late occurred in 21 patients (15.1%), the most serious of which were leaks occurred in 3 patients (2.2%), stricture in 2 patients (1.4%) and GERD in 5 patients (3.6%).

There was one mortality in this series (0.7%) attributed to the procedure.

Conclusion: LSG appears to be a reasonably safe and effective salvage procedure to manage the weight regain problem at least on the short term after failure of a primary restrictive bariatric surgeries.

P.355 Bariatric Surgery, KFSH Experience

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From october 2004 till now 1004 Cases done

261 M (26 %) – 743 F (74 %)

Age 16y – 52y (mean 36y)

60 % co morbid disease

40 failed dieting program

354 LAGB

70 VBG

425 Sleeve Gastrectomy

155 RYGP

LAGB group:

3 Leak

30 Failure (8%), 23 S G.

No slip.

Infection 1 6, 15 removed.

EWL , 30–40 %

No Mort

Sleeve group:

12 leak

11 Reflux

5 Dysph

Visceral thomb.

EWL , 60-70-%

No Mort

VBG group:

1 Leak

5 Stenosis

3 P. dil.

EWL, 50%

G. fistula

Failure 3, SG

No Mort

GBP group:

No leak

2 Reflux

2 Dump.

EWL, 60-70-%

No Mort

P.356 Revisional Surgery from Failed Adjustable Gastric Band to Vertical Laparoscopic Sleeve Gastrectomy in One Surgical Time Case Series

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Introduction: The Laparoscopic Sleeve Gastrectomy (LSG) has proven to be an effective surgical technique for obesity control and its co-morbidities. The revision of a failed laparoscopic adjustable gastric banding (LAGB) has

become a common scenario in bariatric surgery, with debate regarding the best procedure to perform. The international literature highlights a high morbidity with the conversion of a LAGB to a LSG in one surgical time, also with poor weight loss. The main objective of this study is to evaluate the results of the conversion in one surgical time of a failed LAGB to LSG, as a revisional procedure in terms of weight loss and safety.

Method: Retrospective case series based on analysis of a database of 1286 patients, between April 2006 and January 2013.

Results: From a universe of 1286 patients subjected to LSG, 64 patients were subjected to a LAGB withdrawal and converted to LSG in one surgical time, representing 4.98% incidence in this series. Mean age was 40.2 years (18–62), 64% of the patients were female; the mean weight prior to surgery was 94.4 Kg (68.6–144), with a mean BMI of 34.6 (30–44). Co-Morbidities: Insulin resistance 70%, Dyslipidemia 59% and Fatty liver 53%. Excess Weight loss (EWL) at 6 months, was 17.75 Kg, EWL% of 69.52% and BMI of 27.76; at 12 months, EWL was 21.3 Kg, with EWL% of 87.3% and a BMI 26.1. At 24 months, EWL was 18.9 kg, with EWL% of 74.7% and BMI of 27.3. OR time was 92 minutes. 10 patients (10.2%) had another procedure associated, cholecystectomy and liver biopsies were the most frequent; there were no conversions. Morbidity: 5.1% (3) Patients, 1 reoperation by sustained fever, negative laparoscopy, 2 bleeding medically treated. There were no leaks. The average hospital stay was 3 days. There was no mortality.

Discussion: According to these findings, we conclude that LAGB conversion to LSG in one surgical time is an effective revisional procedure regarding weight loss and safety.

P.357 Roux-en-Y Gastric Bypass Versus Sleeve Gastrectomy Results

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Introduction: Roux-en-Y Gastric Bypass (RYGB) is the method of choice for most cases of morbid obesity, providing excellent results as the excess weight loss and control of comorbidities associated with obesity. However, it is a technically more complex procedure with increased risk of complications. The Gastric Sleeve is presented as an alternative therapy, consisting of a less aggressive technique that leads to less risk of complications and it gives good results.

Objective: To study and compare the results of Sleeve Gastrectomy and RYGB techniques.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by the same surgeon of CITOM from August 2001 to February 2013.

Discussion: The excess weight loss and control obesity comorbidities are obtained with both RYGB and Sleeve Gastrectomy. RYGB, being a restrictive and malabsorptive surgery, provides better results; however, it also provides a higher risk of complications. Although RYGB provides better results, for being a restrictive and malabsorptive surgery, it also, however, can cause a higher risk of complications. Sleeve Gastrectomy is a technically simpler procedure, which has as main advantages the lowest risk of complications and the possibility of conversion to another technique. The choice of technique must be individualized for each case, considering the patient's surgical risk, in order to obtain a better result.

Conclusion: Both Roux-en-Y Gastric Bypass and Sleeve Gastrectomy have excellent results on excess weight loss and control of comorbidities associated with obesity. The choice of therapy should be individualized to each patient.

P.358 Sleeve Gastrectomy Results Along the Learning Curve

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Introduction: Sleeve Gastrectomy stood out in bariatric scenario for being a therapy with good results regarding weight loss and control of comorbidities, and for having a low rate of complications. However, this procedure may cause insufficient weight loss and is indicated for patients with less overweight or for those who intends to have an initial weight loss and then, in a second time, performing another procedure.

Objective: To analyze the results among patients undergoing Sleeve Gastrectomy and to relate the factors associated with greater rate of complications and greater excess weight loss.

Methods: This study was designed in historical cohort study with retrospective data of patients treated by surgeons of CTO from 2004 to 2012.

Discussion: Sleeve Gastrectomy is a procedure that involves only a restrictive factor, which includes only gastric reduction and no anastomosis, resulting in a lower rate of surgical complications. The majority of cases have good results as weight loss and comorbidities control. However, some patients may have insufficient loss of weight excess and weight regain in the long term period. In revisional surgeries, it is possible to perform a restrictive and malabsorptive technique to achieve better results.

Conclusion: Sleeve Gastrectomy is a safe procedure, with good results, and, therefore, should be considered as an alternative to Gastric Bypass Roux-en-Y. In cases which this technique provides insufficient loss of weight excess, it is possible perform a combined procedure as revisional technique in a second time.

P.359 Laparoscopic Sleeve Gastrectomy with Gastric Plication for the Treatment of Morbid Obesity

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Background: Laparoscopic sleeve gastrectomy (LSG) is becoming the first choice of bariatric surgery. However, there has a space for improvement in the area of complications associated with LSG, including leakage and GERD.

Methods: Fifty morbid obese patients with GERD underwent our novel procedure, LSG with gastric plication (LSGP), and were followed for 1 to 6 months. Operative complication, weight loss and GERD symptoms were followed compared with a matched group of LSG.

Results: The series consisted of 15 males and 35 females, with an average of 31.2 years (from 15 to 54) and the mean BMI was 39.2 (from 29.8 to 66). The mean operative time was 127 minutes (from 75 to 210). All procedures were performed by laparoscopic surgery. One patient (2%) had major peri-operative complication. The patient had internal bleeding immediately after surgery and had emergency laparotomy for hemostasis. There was no difference in preoperative clinical parameters between the two groups. Surgical time was slightly longer for LSGP (127.0 minutes vs. 110.2 minutes for LSG, $p < 0.05$). The weight loss was similar but less required PPI for GERD symptoms in LSGP (6% vs 18%) at 6 months.

Conclusions: LSG with gastric plication appears to be an acceptable alternative to LSG with some advantages.

P.360 Laparoscopic Sleeve Gastrectomy and Hiatal Hernia Repair in Obese Patients: The Possible Effect on Gastroesophageal Reflux Disease

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Introduction: Obesity is an independent risk factor for Gastro-esophageal reflux disease (GERD) that is often associated to the presence of a hiatal hernia (HH). Laparoscopic Sleeve Gastrectomy (LSG) modifies the upper GI anatomy and this might affect gastroesophageal reflux.

Aim: to evaluate the effect of LSG with or without concomitant HH repair (HHR) on ERD symptoms in obese patients.

Method: From January 2007 to December 2012, 100 consecutive patients (M/F: 16/84; age: 39.3±12.1 y; weight: 123.2±20.6 Kg; BMI: 45.6±6.6 Kg/m²) with HH underwent LSG with concomitant HHR (LSG+HHR group). Their data were compared to that of 102 patients without HH (LSG-group), similar for age, gender and preoperative BMI. All patients underwent a multidisciplinary assessment before and after at least three months the surgical procedure, including double-contrast barium swallow, upper-gastrointestinal endoscopy and a standardized questionnaire for the assessment of typical GERD symptoms. Their intensity and frequency were scored from 0 to 3.

Results: Before the surgery, the prevalence of typical GERD symptoms did not differ between LSG+HHR (38, 5%) and LSG patients (39,2%) ($p=0, 92$). Heartburn and regurgitation frequency-intensity scores were similar between LSG+HHR and LSG group ($p= 0, 54$ and $p =0.47$, respectively). At follow-up there was a significant decrease in the prevalence of typical GERD symptoms only in LSG-group ($p=0.003$). LSG+HHR patients showed a significantly higher heartburn frequency-intensity score compared to LSG patients ($p=0.009$).

Conclusion: At follow-up, in LSG patients the prevalence of typical GERD symptoms significantly decreased. Moreover, in LSG+HHR patients the heartburn intensity-frequency score was higher compared to LSG patients.

P.361 Sleeve Gastrectomy as a Revisional Bariatric Surgery

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Introduction: Laparoscopic adjustable gastric banding (LAGB) and laparoscopic sleeve gastrectomy (LSG) are the two most commonly performed bariatric procedures. Both procedures are associated with the risk of failure and may require conversion to an alternative bariatric procedure.

Method and Results: 789 patients were analysed (268 LAGB and 521 LSG). From this group 29 patients (3.7%) underwent revisional surgery due to unsatisfactory weight loss and complications. Revisional sleeve gastrectomy was performed in 10 patients (1.9% of all sleeves) after primary done LSG (re-sleeve resection) because of the presence of stomach fundus. In patients after LAGB ($n=19, 7.1%$) LSG was performed as the next procedure. 1 patient was excluded due to the lack of any contact. %EWL in LAGB patients before revisional surgery was 22.2 and after revision 39.2 with the mean follow-up of 28.4 months. In the group of LSG %EWL was 8.1% vs 48.4% after revisional surgery with the mean follow-up 18.8 months. All revisional procedures were done laparoscopically without perioperative complications.

Conclusions: Despite the fact that there is no consensus regarding the best surgical option after failure, primary bariatric procedure sleeve gastrectomy may be used as the next steep after failed LAGB with better further weight

loss. When there is some technical defect in primary done LSG, re-sleeve gastrectomy could be performed.

P.362 Dissection of the Precardial Fat Pad. An Easy and Rapid Step to Clearly Identify the OG Junction and Prevent Apical Leaks, Especially in Laparoscopic Sleeve Gastrectomy (LS) Our 5 Years Experience

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Introduction: OG junction is the most common site where an anastomotic leak is likely to occur when performing a LS (80%). It is a feared complication. The treatment is often tedious and the healing is, most of the times, slow and difficult to achieve. Clipping and stenting, when not performed immediately, often do not resolve the problem and surgery is often limited to a wash out and positioning of a drain. The use of buttressing materials has not been proven to decrease the risk. Common consensus is that attention to the OG junction staple line is paramount. In our practice, we routinely perform the accurate dissection of the precardial fat pad.

Method: We have retrospectively reviewed 5 years (550 cases) of LS performed by one surgeon. General complications and leak rate have been recorded.

Results: We have recorded 2.5% of general complications (nausea, vomiting, strictures, post op bleeds), 1 (0.18%) posterior and 1 (0.18%) distal leak. There were no proximal leaks.

Conclusions: Dissection of the fat pad is now standard practice.

It exposes the OG junction and allows the correct application of the stapler and accordingly avoids the inclusion of the oesophagus. We recommend to lift the fat pad, bluntly expose the fibers, to prevent accidental burn injury and then divide it until the Angle of His is exposed. We believe that the dissection of the fat pad is a crucial step of LS for good outcome. It is easy to perform and should be common practice also in gastric bypasses.

P.363 Single Center Turkish State Hospital Experience in Sleeve Gastrectomy

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Introduction: Sleeve gastrectomy for treatment of morbid obesity became popular over the last decade. The ease of the procedure not requiring reconstruction made it widely performed in surgery clinics around the world. In this study we tried to analyze our experience in sleeve gastrectomy.

Method: This is a retrospective study analyzing in patient records of 43 patients who were operated between 2011 and 2013. Data about preoperative and postoperative body mass indices, co-morbidities and demographic variables were collected.

Results: There were 37 females and 6 males. Mean age of patient's was 38.3 (min:23, max:60). There was mortality secondary to splenic trauma and bleeding intraoperatively. Mean preoperative body mass index was 47.1 kg/m² while mean postoperative body mass index was 31.7 kg/m². Sixteen patients had diabetes mellitus preoperatively of which 9 resolved after sleeve gastrectomy. Eighteen patients had hypertension preoperatively and all resolved after surgery. Two patients had asthma and one patient had chronic obstructive pulmonary disease preoperatively. Asthma did not improve but chronic obstructive pulmonary disease resolved on follow up. Detailed statistical analysis is pending.

Conclusion: Sleeve gastrectomy is effective in decreasing excess weight in morbidly obese patients. It can be safely performed in state hospital setting on Turkish population. It is also effective in remission of co-morbid diseases secondary to obesity.

P.364 Outcomes of Laparoscopic Sleeve Gastrectomy Versus Roux-En-Y Gastric Bypass At 2 Years: A Case-Matched Study

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Introduction: Although published evidence comparing laparoscopic sleeve gastrectomy (LSG) to Roux-en-Y gastric bypass (LRYGB) has shown comparable medium-term weight loss, it lacked control for potentially confounding factors. We provide an update of an ongoing case-matched comparison of outcomes of LSG and LRYGB.

Methods: This is a retrospective, case-matched analysis of patients who underwent either LSG (n=26) or LRYGB (n=26) in a single institution between October 2008 and March 2012. The groups were matched for age, gender, diabetic status and preoperative body mass index (BMI). Outcome measures were postoperative morbidity and mortality, percentage excess weight loss (%EWL), and resolution of type-2 diabetes (T2D) defined as glycosylated haemoglobin <42 mmol/mol.

Results: The groups were comparable for age (46 vs. 46 years), sex (female 73% each), preoperative BMI (50 vs. 52 kg/m²), and prevalence of T2D (27% each). There were no leaks, conversions or mortality. There were no significant differences between LSG and LRYGB in %EWL at 6 months (50% vs. 50%), 12 months (62% vs. 65%), and 24 months (65% vs. 70%). In super-obese patients, comparable %EWL was achieved at 12 months (64% vs. 61%) and 24 months (76% vs. 69%). Whilst rates of postoperative remission of T2D were higher after LRYGB, these changes were not significant (43% vs. 86%, p=0.09).

Conclusion: Both LSG and LRYGB result in comparable weight loss at 2 years with low postoperative morbidity. Further data is required to see whether the differences in postoperative diabetic remission are significant.

P.365 5 Years After Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is being used as a new tool for the treatment of morbid obesity. LSG has been shown to give good weight loss in first 3 years, but long term reports are few.

Methods: A total of 248 morbidly obese patients (males 26 % females 74 %; mean age 34 +/- 5 years, mean preoperative BMI 47.6 kg/m²) underwent LSG from June 2007 to June 2013. The stomach was resected over a 37 french bougie, starting 3–5 cm from the pylorus.

Results: The BMI decreased from an average of 47.6 kg/m² to 30.2 kg/m² after 2 yrs, increased to 39.4 kg/m² at 5 yrs. 18 % of the patients underwent a revision surgery within this time period. Significant Pre pyloric dilatation of the antrum was seen in 72% patients. New onset acid reflux was seen in 21 % patients at 5 years post LSG.

Conclusion: Sleeve gastrectomy is being commonly used as a primary bariatric procedure. Like all restrictive procedures a high incidence of weight regains will be evident in the long-term. High pressure inside the sleeve might cause acid reflux in some patients. A careful patient selection is strongly emphasised for LSG.

P.366 Laparoscopic Sleeve Gastrectomy. Our Experience

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Aim: LSG has become popular as both primary and revisional bariatric operation in morbidly obese. Our aim was to investigate safety and efficacy of LSG in both weight loss and relief of comorbidities

Methods: We conducted retrospective and prospective analysis of LSG performed from 1 January 2008 to 1 April 2012. We also interviewed the patients in order to establish their overall satisfaction with the program

Results: 495 patients underwent LSG. Male to female distribution was 1:1.5. Median age and BMI were 47 (21–76), and 52 (35–89) respectively. 106 operations were staged procedures following failed LGB (103) and open stapled gastroplasty (3). Mean operative time was 77 min (38–187). There was no mortality. Postoperative complications included gastric leak (1), stricture (1), bleeding (1), wound infection (5) and prolonged nausea (1). Median LOS was 2 (1–61 days). Follow-up was achieved in 475 patients (96%). Mean EWL was 79% (23–100) for primary and 47% (16–81) for revisional LSG. Reduction of patients' comorbidities was consistent with world standards. 493 (99%) were absolutely satisfied with their weight loss and service provided

Conclusions: In competent hands, LSG is safe, simple and efficacious. It achieves excellent results in weight loss and sustainable mid-term improvement in patients' health overall. Stand-alone LSG consistently produced good EWL in moderate term follow up. Serious complications are rare, but extremely difficult to manage both clinically and psychologically.

P.367 Laparoscopic Sleeve Gastrectomy as a Revision for Failed Gastric Banding

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Aim: LSG has become popular as both definitive stand alone and revisional weight loss operation in morbidly obese. Our aim was to describe this procedure as a tool for a failed gastric band.

Methods: We conducted retrospective and prospective analysis of all LSG performed as a revision in failed LAGB from 1 January 2008 to 1 April 2012. We also interviewed these patients for reported weight loss and satisfaction with the procedure.

Results: 106 patients underwent LSG following failed gastric band. The procedure was performed in 2 stages in all cases. There were 79 females and 27 males. Mean age and BMI were 47 (23–67), and 43 (30–61 kg/m²) respectively. Indications for revision were: intolerance/failure of weight loss (78); erosion (7); migration (21); primary band infection (1). Mean operative time was 124 min (63–187). There was no mortality. Morbidity: bleeding (1), gastric stricture (1) and one unplanned re-admission. Median LOS was 3.8 (1–30 days). Follow-up was achieved in 103 patients (97%). Mean EWL 47% (16–81).

Conclusions: In competent hands revisional LSG is an effective weight loss procedure for a failed gastric band. It achieves acceptable results in weight loss and sustainable mid-term improvement in patients' health overall. Serious complications are rare, and further revision to a different configuration is feasible.

P.368 Laparoscopic Sleeve Gastrectomy: Early experience from a UK Bariatric Centre

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Introduction: LSG has been shown to be a safe, effective procedure.

Method: Data on 91 patients undergoing LSG were collected prospectively. 61 (67%) were female. Median age was 48yrs (23–71), median BMI 48.4 (31.6–75). Co-morbidities included hypertension (n=35, 38%), sleep apnoea (n=27, 30%) and diabetes (n=21, 23%).

Maloney bougies size 32–40Fr. were used and distance from the pylorus was 3–9cm, reflecting evolving technique. Excised gastric volume and residual sleeve volumes were measured. Staple lines were reinforced with Seamguard.

Concomitant hiatus hernia repair was performed in 16 patients, and take down of a Nissen's fundoplication in one. Patient weight was recorded during follow up. Excess weight was calculated using BMI 25 for ideal weight.

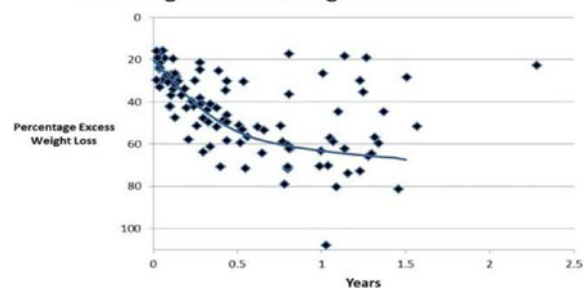
Results: There was no mortality, staple line leak, or conversion to open surgery. Gastric volume excised ranged from 320–3050mls.

Six patients suffered wound infections; three required post-operative blood transfusion. One patient undergoing peritoneal dialysis had a conservatively managed small bowel obstruction. One required endoscopic stricture dilatation. One patient returned to theatre for oversewing of the staple line after it was discovered that a naso-gastric tube had been transected during stapling. One case of nutritional deficiency occurred due to psychological issues. Weight loss data was available for 44 patients. Median follow up time was 10 months (1–28).

The majority of patients (63%) followed up to one year lost greater than 50% of the excess weight.

Conclusion: Our early results are inline with reported data and suggests LSG is both safe and effective in the short and medium term.

Percentage of Excess Weight Loss Over Time



P.369 Control of Type 2 Diabetes in Bariatric Indian Patients Post Laparoscopic Sleeve Gastrectomy: Early Phase Results from a Single Centre

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Background: Type 2 diabetes is a fast rising epidemic along with morbid obesity in the Indian sub-continent. Both run a relentless course with debilitating end organ effects. Bariatric surgery and certain novel procedures have produced the best remission rates for diabetes and other co-morbidity associated with the metabolic syndrome. Laparoscopic Sleeve Gastrectomy (LSG) is the most commonly performed bariatric procedure at our centre. We present the results of our experience with this approach in Indian bariatric diabetic patients.

Methodology: Data from our prospective database of bariatric patients is presented here. Detailed data from January 2010 to March 2012 is presented. Patient metabolic status, follow-up progress of metabolic parameters, especially resolution of diabetes is profiled.

Results: A total of 92 patients underwent a LSG during this period with 77 patients having good follow-up data. 20.8% of these patients were diabetic with a 12.5 ± 6 month diabetic duration and followed up for 12.7 ± 3 months post procedure. The patients were aged 44.1 ± 10 years with a Body Mass Index (BMI) of 48.7 ± 11 kg/m², FBS 155.3 ± 38 mg/dL, PPBS 236.8 ± 75mg/dL, HbA1c 7.6 ± 1%, 56.3% taking oral hypoglycaemic drugs, and 31.3% on Insulin replacement therapy. Twelve month post procedure the average - BMI was 34.2 ± 10 kg/m², FBS 96.2 ± 30 mg/dL, PPBS 130.8 ± 31 mg/dL, HbA1c 6.2%, with 75% patients having complete and 20% partial resolution of diabetes.

Conclusions: Long-term outcomes in larger groups of patients are needed to evaluate the efficacy of LSG as a stand-alone procedure in the treatment of type 2 diabetes mellitus associated with morbid obesity in Indian patients. These preliminary outcomes lend support to the role of bariatric surgery being included in diabetes management algorithms.

P.370 Results of Laparoscopic Sleeve Gastrectomy After Failed Gastric Banding

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Introduction: Gastric banding is a safe and effective procedure. Unfortunately the failure rate in the long term is about 20%. The purpose of this study is to confirm the feasibility and safety of medium-term conversion to sleeve gastrectomy for poor weight loss or complications.

Methods: A retrospective study was conducted from a monocentric prospective database. The mean follow-up was 42 months.

Results: From May 2004 to December 2012, our team performed 100 sleeve-gastrectomies after failed gastric banding in 87 women and 13 men. Mean age was 44.9 ± 3.3 years (20–68). The removal of gastric banding occurred in 69% of cases during the same operation as the sleeve gastrectomy. The mortality rate was zero. The overall morbidity rate was 3%. The rate of fistula was zero. We describes a hematoma requiring a conversion in retrogastric bypass gastrique, abscess wall at J5 treated medically, a bleeding on the staple line requiring reoperation. The body mass index (BMI) of 48.12 initial ± 4.28 kg/m² (32.9 to 80.3). BMI was respectively 41.48 ± 4.7 kg/m² at 1 year, 45.03 ± 5.9 kg/m² at 2 years, 49.98 ± 10.47 kg/m² at age 3. The percentage of excess weight loss (% EWL) is 50.62%, with 42.72% from 43.06% at 1, 2, 3 years. We get a better result for BMI below 50 at 1 year ($p < 0.0001$).

Discussion: Results in terms of morbidity are better in the series after sleeve gastrectomy after failed gastric banding to series sleeve gastrectomy alone. Results in terms of weight are comparable.

P.371 Variance in the Influence of the Sleeve Gastrectomy on Diabetic and Non-diabetic Bariatric Indian Patients: From Metabolic Disease to Bariatric Design¹

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Background: The Sleeve Gastrectomy forms an integral component of primary bariatric and metabolic algorithms, synchronously and metachronously. Type 2 diabetes represents a dominant bariatric co-morbidity with high remission with sleeve gastrectomy. Laparoscopic Sleeve Gastrectomy (LSG) is the most commonly performed bariatric procedure at our centre. We contrast our experience with LSG in Indian diabetic and non-diabetic bariatric patients with the intent to understand and formulate better bariatric / metabolic procedures for the future.

Methodology: Data from our prospective database of bariatric patients is presented here. Detailed data from January 2010 to March 2012 is presented. Patient metabolic status, follow-up progress of metabolic parameters, especially resolution of diabetes is profiled.

Results: A total of 92 patients underwent a LSG during this period with 77 patients having good follow-up data. 20.8% of these patients were diabetic. There was no difference in the biological profiles of diabetic and non-diabetic patients undergoing LSG. The EWL at 12 months in diabetic and non-diabetic patients was $82.6 \pm 53\%$ vs. $51.2 \pm 16\%$. There was a 95% positive influence of LSG on diabetes at 1 year.

Conclusions: Long-term outcomes in larger groups of patients are needed to evaluate the efficacy of LSG as a standalone or adjunctive procedure in the treatment of morbid obesity and type 2 diabetes mellitus in Indian patients. Future treatment procedures and algorithms must be designed on the analysis of rigorous long-term follow-up bariatric-metabolic data.

P.372 Laparoscopic Butterfly Gastroplasty after Failed Sleeve Gastrectomy in Morbidly Obese Patient

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Introduction: Sleeve gastrectomy is the most popular bariatric procedure done now in morbidly obese patients. It's an effective method for control of morbid obesity especially for the bulk eaters. The cardinal complications after sleeve gastrectomy are either low rate of weight loss (15%) or weight regain due to pouch dilatation (50% four years after surgery). Laparoscopic butterfly gastroplasty done for the dilatation pouch after sleeve is a very effective, easy procedure in the long term re-control of morbid obesity.

Methods: from Jan 2010 through Jan 2013, laparoscopic Butterfly gastroplasty was attempted in 40 patients with failed sleeve gastrectomy. Median age was 32, with median preoperative BMI 48. The Butterfly gastroplasty (micro funnel shaped pouch) was constructed using two 45 blue endo-cutter cartridges the outlet of the pouch was banded with a prolene mesh.

Results: Average excess weight loss at one year was 65%, at two year 75% and at the third year 80%. The mean operating time was 50min. The outlet calibration was accurate and easy. There was no leak or mortality.

Conclusion: Butterfly gastroplasty, (micropouch funnel shaped pouch) after failed sleeve gastrectomy is an effective way to prevent pouch dilatation and therefore prevent the weight regain occurred in a high Percentage of patients under went sleeve gastrectomy. The pouch being micro- Funnel rather than tubular-shaped prevent solid food intolerance and reflux disease. The way of construction of the butterfly allow easy accurate outlet and less costs.

P.373 Two-stage Approach in the Treatment of Morbid and Super Obesity

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Introduction: Among the population of Ukraine 30% of people are overweight, up to 25% of working age adults have obesity. The prevalence of obesity among persons older than 45 years is 52%, and overweight - 33%. Using conservative methods does not allow to achieve sustainable positive result.

Method: From September 2008 to December 2012 intragastric balloon have been installed to 6 patients with morbid and 11 patients with super obesity. The average age of patients was 39.6 ± 11.2 years. The average body weight was 156.7 ± 20.3 kg. The average body mass index (BMI) was 52.2 ± 9.6 kg/m². Time of balloons installation was 6.2 ± 1.3 min, removal 8.5 ± 2.4 min. Second stage of treatment – bariatric surgery was performed during 1 week after removal the balloon.

Results: At the time of balloon removal the initial body weight reduced by (19.0 ± 5.5) kg, excess weight loss was $(32.7 \pm 15.8)\%$, BMI - (42.5 ± 10.7) kg/m². The maximum weight loss was 55.0 kg. If the patient have been lost more than 10% of the initial weight, the second stage of treatment was restrictive operation, if less then 10% - gastric bypass. The adjustable gastric banding was performed to 11 patients, sleeve gastrectomy - 1, gastric bypass - 5. The treatment was effective in 14 (82.3%) cases.

Conclusion: Two-stage approach in the treatment of patients with morbid and super obesity, using as a first stage - installation of nragastric balloon, as the second - performing bariatric surgery, reduces anesthesiological risk during surgery and helps to achieve long-term positive outcomes.

P.374 Omentectomy in Addition to GBP and Influence on Insulin Sensitivity: A Double Blind Randomized Controlled Trial

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Introduction: Accumulation of visceral adipose tissue is associated with insulin resistance and cardiovascular disease. However, whether surgical removal of visceral fat is metabolically favorable remain elusive. The objective is to elucidate whether omentectomy in conjunction with gastric bypass surgery results in long-term improvement of insulin sensitivity.

Methods: A double blind randomized controlled trial with 2 year follow up. The study was performed between May 2006 to December 2011. Subjects were recruited from patients who had been referred and accepted for bariatric surgery at four different surgical centers in Stockholm, Sweden. 81 patients were included and 62 were reexamined after 2 years. All subjects underwent gastric bypass operation with or without omentectomy. The primary outcome measure was insulin sensitivity measured by hyperinsulinemic euglycemic clamp. Secondary outcome measures included cardiometabolic risk factors.

Results: Before intervention, there were no clinical or metabolic differences between the two groups. The difference in the primary outcome measure, insulin sensitivity, was not significant between the omentectomy group (6.6 ±1.5 mg/kg body weight/minute) and non-omentectomy group (6.7 ±1.6 mg/kg body weight/minute) after 2 years. Nor did any of the cardio metabolic risk factors that were secondary outcome measures differ significantly.

Conclusion: Addition of omentectomy to gastric bypass operation does not give an incremental effect on long term insulin sensitivity or cardiometabolic risk factors. The clinical use of omentectomy in addition to gastric bypass operation in obesity does not seem to be indicated.

P.375 Revisional Bariatric Surgery Can Be Done with Low Morbidity and 0% Mortality in an Obesity Reference Surgery Unit

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Introduction: Revisional bariatric surgery has two main causes, weight regain or complications of the primary procedure. The aim of this study was to review the morbidity and mortality rate of revisional surgery after failed bariatric procedures in our bariatric reference surgery unit.

Method: We perform a retrospective analysis of the patients who underwent revisional bariatric surgery after different initial bariatric procedures including Roux Y gastric bypass (RYGB), sleeve gastrectomy (SG), vertical banded gastroplasty (VBG), laparoscopic gastric band (LAGB) and duodenal switch (DS). The data collected included the cause for revision, complications, length of hospital stay and 30-day mortality.

Results: 68 patients were included in this study (8 of them referred from other centers). Previous surgery was VBG (51.66%), RYGB (25%), LAGB (10%), SG (9.99%) and DS (3.33%). Surgery indications were inadequate weight loss ($n=48$), adverse symptoms (reflux=5, dysphagia=6), fistula (2), malnutrition (2) and band complications (erosion=1, slippage=3, vomits=1). Revisional surgery performed was conversion to RYGB in 73.33% cases (50 patients, 38 open, 12 laparoscopic), common limb shortening (23.33%) and common limb enlargement (3.33%). Mean hospital stay was 6.8 days.

Total morbidity was 13% (minor complications 4 patients, major complications 5 patients). There was no 30-day mortality.

Conclusion: Revisional bariatric surgery can be performed with low morbidity and 0% mortality. Bariatric surgeon must be familiarized with different techniques and even with open approach but when feasible laparoscopic procedures can be performed safely.

P.376 Do Obesity Surgeries Assure Long Term Remission of Diabetes? A Six Years Follow Up of 3,793 Morbidly Obese Diabetics After Surgery

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Introduction: Obesity and diabetes usually co-exist. Obesity surgery seems to offer solutions for both.

Method: Data on obesity surgery in Germany (2005–2011) were collected from Quality Assurance Institute in Magdeburg University. Follow up (at 1, 2 and up to 6 years) focused on effect of bariatric surgery on diabetes profile in morbidly obese Germans.

Results: Among 17,670 patients, 5,506 (31.16%) were diabetics. Of those, 3,793 patients (68.9%) were followed up at 1, 2 and up to 6 years. Insulin treated (IT) patients were 1,176 (31%) vs. 2,409 (63.5%) non-insulin treated (NIT). 1,678 Roux-en-Y Gastric Bypasses (RYGB) (44.25%), 1,273 (33.57%) Sleeve Gastrectomies (SG), 628 (16.56%) Laparoscopic Adjustable Gastric Bands (LAGB), 113 (3%) Biliopancreatic Diversions with Duodenal Switch (BPD/DS) and 47 (1.25%) Biliopancreatic Diversions (BPD) were performed. At 1 year, remission/improvement (RI) percentage was 83.5%, 82.5%, 67.8%, 93.4% and 84.8% after RYGB, SG, LAGB, BPD and BPD/DS, respectively. At 2 years, RI% was 84.9%, 79.5%, 67.7%, 94.5% and 90.9% after RYGB, SG, LAGB, BPD and BPD/DS, respectively. At late follow up, RI% was 83.2%, 59.5%, 58.9%, 100% and 86.4% after RYGB, SG, LAGB, BPD and BPD/DS, respectively. IT patients showed insignificantly higher RI% than NIT patients at 1, 2 and 6 years. Malabsorptive procedures (RYGB, BPD and BPD/DS) showed insignificantly higher RI% than restrictive procedures (LAGB and SG) at all follow up points.

Conclusion: Obesity surgery has promising anti-diabetic efficacy, more in IT patients. RYGB and SG are the most common procedures. Malabsorptive procedures show higher, gradually descending, but durable anti-diabetic efficacy.

P.377 Histological and Microbiologic Findings in the Jejunal Functionless Loop of the Sleeve Gastrectomy with Jejunal Bypass

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Introduction: One of the frequent questions about the functionless loop of the Sleeve Gastrectomy with Jejunal Bypass (SGJB) is about whether it will be a source of bacterial overgrowth or blind loop syndrome. The objective of this study is to present the histologic and bacterial status of this loop.

Method: 3 patients operated on cholecistectomy for cholelithiasis post SGJB. A jejuna sample was obtained from the tip of the functionless loop with an endo stapler 45 mm. Microbiologic and pathologic studies were conducted, with tissue cultures and histological stains.

Results: The patients were operated at 11, 14 and 42 months after their initial SGJB. Preoperative mean BMI was 42 kg/m² (35.8–46.9). Postoperative BMI at the time of jejunal biopsy was 29 kg/m² (25.4–32.4), with a mean follow up of

23 months (11–42 mo). Mean excess BMI loss percentage was 78%. One patient was diabetic with an actual HbA1c of 5.6% at 11 months. There were no complications from the procedure. All of bacterial cultures showed normal intestinal flora. Both histological results were similar: 1) Jejunal mucosa and wall don't present morphologic alterations, 2) No alterations in local microbiologic flora after PAS, GRAM and GROCCOTT studies, 3) Villous trophism is unaltered, 4) No modifications in vascular plot, mienteric nor ubmucosal nervous plexus. There are not indirect proofs that there is bacterial proliferation. **Conclusion:** This study suggests that the jejunal functionless loop in Sleeve Gastrectomy with Jejunal Bypass is not a source of bacterial overgrowth and its histological structure remains unaltered.

P.378 Evaluation of Sleeve Gastrectomy with Jejunal Bypass Versus Roux en Y Gastric Bypass and Sleeve Gastrectomy with the Bariatric Analysis Report Outcome System (BAROS)

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Introduction: Sleeve Gastrectomy with Jejunal Bypass (SGJB) is performed in our institution since 2004 for the treatment of obese patients. This technique has been subjected to evaluations in terms of weight loss and comorbidities resolution. The aim of this study is to assess the quality of life (QoL) of patients undergoing SGJB compared with Sleeve Gastrectomy (SG) and Roux-en-Y Gastric Bypass (RYGB), by the BAROS Moorehead–Ardelt survey.

Methods: BAROS was applied in a series of 92 obese patients operated with the three surgical techniques at DIPRECA Hospital in Santiago, Chile between May 2012 and February 2013. Incomplete surveys were excluded. Patients had at least 6 months of follow-up. 77 met the inclusion criteria (SGJB=24, SG=25 and RYGB=28), operated between September 2007 and August 2012. To facilitate statistical analysis, was established as successful surgery an score>3 (Good, Very Good and Excellent). Scores<3 were defined as poorly evaluated (Regular and Poor). Fischer Test was used with a p-value of <0.05.

Results: When comparing the three techniques, there was no statistical difference in outcome, although there is a trend towards lower failure with SGJB over SG and RYGB (4.2%, 14.3% and 28% respectively, p=0.07). Comparing SGJB with RYGB, the first appears to be better evaluated but not significant (p=0.271). When comparing SGJB with SG, this difference becomes significant (p=0.049).

Conclusion: There is a general tendency of SGJB to be better evaluated in QoL when compared with SG and RYGB. When compared individually, SGJB is better evaluated than the SG, which is statistically significant.

P.379 Sleeve Gastrectomy with Jejunal Bypass. A More Physiological Alternative to Roux-en-Y Gastric Bypass

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Introduction: In 2004 a new restrictive and hormonal surgical technique was created, the Sleeve Gastrectomy with Jejunal Bypass (SGJB). The objective is to evaluate the SGJB as a surgical technique for the treatment of morbid obesity in terms of Excess Weight Loss (EWL) and resolution of comorbidities.

Methods: Prospective case series. Patients with Body Mass Index (BMI) >30 kg/m² underwent a SGJB between February 2004 and January 2013 via laparoscopy or laparotomy at DIPRECA Hospital, in Santiago, Chile. Weight loss, complete and partial resolution of comorbidities is reported. Parametrical and non parametrical descriptive statistics were used.

Results: 455 consecutive patients matched the inclusion criteria with a mean age of 41 (18–69) years and 66% female. Mean preoperative BMI was 37.9±5.7 kg/m² (30.1–58.3). Surgical time was 120±30 minutes (70–240). 89% of cases were laparoscopic; the conversion rate was 2.4%. Postoperative stay was 2±1 days. Main comorbidities were Dyslipidemia 43.5%, Hypertension 37.7% and type 2 diabetes 15.9%. EWL% at 6, 12, 24, 36, 48, 60, 72 and 84 months was 86.7, 97.2, 92.4, 84.2, 79.7, 77.1, 74.1, 84.2% respectively. Surgical morbidity was 8.4% and mortality 0.6%. Complete remission of Type 2 Diabetes was achieved in 81.5% (31/38) and partial remission in 18.5% (7/38). Dyslipidemia shows a 95% of complete remission. High blood pressure had a 66.6% of resolution and 26.7% of improvement. No dumping, anemia, malabsorption syndrome or bacterial overgrowth was observed.

Conclusion: SGJB is a safe and effective surgical technique for the treatment of morbid obesity and resolution of its comorbidities.

P.380 Conversion of Gastric Band to Laparoscopic Sleeve Gastrectomy / Gastric Bypass in a Two Stage Operation Is Safer Procedure

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Introduction: The percentage of patients requiring lap band reoperation is extremely high, ranging from 11% to 37%.² Laparoscopic revisional bariatric surgery has been associated with higher complication rates than non revisional procedures. The rate of conversion of Lap bands to other bariatric procedures has been steadily increasing. The conversion is a revisional procedure and can carry a higher risk of complications.

Methods: A retrospective look at Bariatric surgery procedures performed from 2009 till 2012. There were 600 cases performed at a single institution. Twenty (20) conversions from Lap band to Laparoscopic Sleeve or Gastric bypass. Five (5) patients were diabetics prior to conversion. Fifteen (15) patients were hypertensive.

Results: Fifteen (15) cases were converted from Lap band to Laparoscopic Sleeve surgery. Five (5) cases were converted from Laparoscopic gastric band to Laparoscopic Gastric bypass. There were no complications reported. Follow up was average 1 year. There was an increase in weight loss results from 40% to 60% after conversion. There was resolution of comorbidities after conversion. Diabetes resolved in four(4) out of five(5) patients 90% resolution better than lap band.

Conclusion: Two stage conversion of Lap band to either Laparoscopic Sleeve gastrectomy or Laparoscopic Gastric Bypass is safer. The conversion is also beneficial in treating the comorbidities unresolved with Lap Bands.

P.381 Enhanced Recovery After Bariatric Surgery (ERABS): Operative and Clinical Outcomes from a Tertiary Referral Bariatric Centre

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Background: There is paucity of data on Enhanced Recovery after Bariatric surgery (ERABS) protocols. We report outcomes of this protocol utilised within a tertiary referral Bariatric Centre.

Methods: Data on primary procedures (gastric bypass, sleeve & band) performed over 9-months within an ERABS protocol were prospectively recorded. Interventions included shortened preoperative fasts, intra-operative humidification, early mobilisation/feeding, incentive spirometry, use of prokinetics/laxatives. Data included demographics, co-morbidities, morbidity/mortality, length of stay (LOS), re-admissions. Data reported are mean(SD).

Results: 226 procedures were undertaken: 150 bypasses, 47 sleeve gastrectomies and 29 bands. 40% of patients had hypertension, 34% diabetes mellitus, 24% sleep apnoea and 9% limited mobility. No anastomotic/staple line leaks.

Postoperative morbidity occurred in 9 patients (6 developed respiratory morbidity, 1 DVT, 1 acute kidney injury, 1 postoperative bleed). One patient underwent re-laparoscopy (within 30-days surgery) that ruled out a staple line leak. One death occurred from massive PE (high-risk patient with previous PE despite insertion of preoperative-IVC filter). Respective LOS for bypass, sleeve and band were 1.88(1.12), 2.30(1.69) and 0.69(0.81)days. Successful discharge on first postoperative day was achieved in 37% and 28% of bypasses and sleeves. Daycase gastric bands were performed in 48% of patients. 30-day hospital re-admission occurred in 6 (2.7%) patients.

Conclusion: Applying an ERABS protocol was safe, associated with low morbidity, acceptable LOS and re-admission rates, and should be considered standard of care within Bariatric Centres.

P.382 Modified Intestinal Bypass a New Promising Procedure for Morbid Obesity

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Background: Bariatric surgery is an effective method of inducing weight loss but can be associated with nutrient deficiencies post-operatively. This is particularly seen following.

Aim: We designed a new bariatric procedure, the Modified Intestinal Bypass (MIBP) involving gastric restriction and bypass of the jejunum to the distal ileum, preserving the duodenum. Our study evaluates the effect of MIBP on weight loss and post-operative nutrition, with particular emphasis on serum calcium, albumin, iron, vitamin B12 and zinc.

Methods: A total of 156 patients (122 female) underwent MIBP 1999 through 2005. The mean age was 40 years and the mean body mass index (BMI) was 56kg/m². Subjects were followed up for three years. The excess weight loss, calcium, albumin, hemoglobin, iron, zinc, vitamin B12, and prothrombin concentration of all the participants were examined pre-operatively, and then after three, six and twelve months in the first post-operative year. Further assessment was completed annually for the duration of the study.

Results: The mean excess weight loss achieved was 84% at three years. Serum calcium, albumin, iron, vitamin B12 and zinc decreased in the first post-operative year but then recovered within two years and remained stable for the remainder of the study.

Conclusion: MIBP results in weight loss comparable to mainstay malabsorptive bariatric procedures but with no long term nutritional deficiency. Our new concept is "Good Digestion and Selective Absorption" instead of the old one "Maldigestion and Malabsorption".

P.383 Revisional Surgery: Adjustable Gastric Band to Sleeve Gastrectomy - Al Amiri Experience

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Introduction: Although some patients attain good outcomes after Adjustable Gastric Band (LAGB), a certain quantity have experienced complications and insufficient weight loss. The Objective of this study is to assess the practicality and outcome of Laparoscopic Sleeve gastrectomy (LSG) as a revision surgery after a failed LAGB.

Methods: A retrospective analysis of 80 patients underwent LAGB, of which 40 patients received LSG as revision surgery from 2009 to 2012 in Al Amiri Hospital, Kuwait. Data analyzed included percentage of excessive weight loss (EWL%), Body Mass Index (BMI), and post-operative complications. Paired t test was utilized to evaluate total eight loss after both procedures.

Results: Among the 40 patients that underwent revision surgery, the mean age was 36 years old, 34 (85%) of which were females. Follow up for LAGB was 1 year to 11 years (median 4.5 years) and 6 months to 3 years (median 1 year) for LSG. Mean BMI before LAGB was 44 kg/m² (SD = 7.2) and mean weight was 117.2 kg (SD = 25.1). Median EWL% achieved with LAGB was 11.5% and after LSG a median EWL% of 56.9% was recorded. Complications included insufficient weight loss (n=4), persistent vomiting (n=2) and biliary colic (n=2). After revisional surgery, significant drop in BMI was noted with p-value < 0.002.

Conclusion: Laparoscopic conversion from LAGB to LSG may be considered an alternative for patients with a failed LAGB procedure. However, a longer follow up study is required to validate the results.

P.384 Banded Bypass with Adjustable Gastric Banding as a Re-do Procedure; A Word of Caution

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Introduction: Redo bariatric surgery for weight gain can be challenging. Several tailor-made procedures can be adopted depending on previous procedures, patient characteristics and the surgeon's preferences. We describe results in a cohort of patients who received a banded bypass with an adjustable gastric band as a redo procedure for weight gain after gastric banding or after gastric bypass.

Methods: The complete cohort of patients with a banded bypass performed as a redo procedure was retrospectively analyzed. Items were number and type of previous bariatric surgeries, following procedures after banded bypass, failure rates and complications.

Results: Between December 2010 and June 2012, seventeen re-do banded bypasses were performed. There was no loss to follow-up or mortality. After a median follow-up of 21 months (range 9–27), 8 patients (47%) underwent 10 bariatric re-operations due to failure or late complications. In 7 patients (41%), the band had to be removed after a median follow-up of 8 months (range 4–24) as a result of complications. Median BMI decreased from 38,4 to 34,9 during follow-up.

Conclusions: The banded bypass with an adjustable gastric band performed poorly in our cohort. Due to late band-related complications, 41% of the bands had to be removed after a relatively short median follow-up of 21 months. We do not recommend this procedure for the indication of weight gain or poor weight loss after previous bariatric surgery.

P.385 An Audit of 500 Patients Undergone Bariatric Surgery in a Rural Centre in India

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Objective: To review our results of, laparoscopic sleeve gastrectomy, laparoscopic RYGB and laparoscopic MGB for the treatment of morbid obesity.

Materials and methods: It was a prospective cohort study in which the 307 patients who had undergone bariatric surgery (laparoscopic adjustable gastric banding, laparoscopic sleeve gastrectomy, and laparoscopic gastric bypass) during the period January 2006 to January 2013 were followed up at 1month,6months,1 year 2 years and 3 years interval. The various parameters studied included weight loss, excess weight loss, percentage excess weight loss, resolution of comorbidities like diabetes mellitus, hypertension ,sleep apnoea etc. Also studied were the operating time, hospital stay, complications-perioperative and delayed and the mortality.

Results: The percentage excess weight loss was 74.6% in the laparoscopic bypass group but was 62,9% in the laparoscopic sleeve gastrectomy group.

The resolution of diabetes mellitus was 72.7% in the laparoscopic bypass group but 66.6% in the laparoscopic sleeve gastrectomy group. However the bypass group had perioperative complications like bleeding from the remnant stomach and anastomotic leak and delayed complication presenting as a case of intestinal obstruction. There were two delayed mortalities as a result of DVT. Though the long term results of MGB are not available, the immediate post-operative comfort was much better than the other two groups and procedure take lesser time.

Conclusion: All three types of bariatric surgery are safe and effective. Though the long term excess weight loss and resolution of co morbidities was maximum in the laparoscopic roux-en-y bypass group, the operating time, hospital stay and complications were slightly higher in this group.

P.386 Band-On-Bypass Procedure for Failed RYGB - Preliminary UK Results

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Background: The band-on-bypass (BOB) has been proposed as a salvage procedure for failed RYGB. We report our preliminary experience.

Methods: Prospective database analysis of cases done between 2010 and 2012. Key outcome measures include weight loss and peri-operative and late complications. All data expressed as mean [range].

Results: Seven patients studied. BMI pre RYGB = 48kg/m² and pre BOB =39kg/m². Time to nadir weight loss after RYGB was 1.1 yrs, with BOB performed 5.2yrs later. No deaths or open conversions. Only complication was 1 case of SB obstruction after bowel twisted through a loop of slack of band tubing. No slippage or erosion to date. Five of the 7 patients are <12 months post-op, yet most (6/7) have lost weight (%EWL pre-BOB 44% and post-BOB 60%, p<0.007, paired t-test). The patient who failed to lose weight has maintained her pre-BOB weight despite infrequent follow up attendance.

Nadir weight after RYGB	Weight gain	%EWL after RYGB at time of referral	Time since BOB performed (months)	Combined %EWL (RYGB + BOB)	Improvement in %EWL after BOB (all patients)
88kg	17kg	44%	11	60%	16%
[71–124]	[11–26]	[18–67]	[2–26]	[38–87]	[0–28]
p=0.007					

Conclusion: Although preliminary, our findings show the BOB procedure to be safe and it results in significant and fairly rapid improvements in %EWL in most patients. We feel this technique merits further study.

P.387 Re Do's in Bariatric Surgery

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Introduction: Bariatric surgical intervention leads to a loss of weight as well as to a reduction of co-morbidities. But some method-specific weakness can be seen in the long course of time. In comparison to Europe (1), where most of the Re Do's concern problems with the gastric band, in America it is the Roux-Y-Bypass (2, 3).

Method: In an Analysis period of 4 years of the Re Do's in a hospital near Vienna.

Results: The main reason for the transformation of a gastric-Band into a gastric-Bypass is the oesophagus-dilatation with the gain of weight after unblocking the gastric-band, followed by Band-Migration and Band-infection.

The reason for the conversion of a Vertical Banded Gastroplastic (VBG) is the break of clips.

Conclusions: There are more and more revisional interventions after bariatric surgeries with a frequency of about 15-20% in our clinic (34 out of 176 bariatric interventions were Re-Do's) Most of them come from transformations of a gastric-Band into a gastric-Bypass, either during one operation or in two times.

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P. 388 Robotic Assisted Bariatric Surgery Is It Justified for All Surgeries?

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Introduction: Minimal Access Surgery has revolutionized the surgical treatment of morbid obesity. Robotic Surgery stole the limelight in the recent years with its obvious advantage over laparoscopic surgery. We aimed at finding its feasibility and justification in the field of Bariatric surgery.

Methods: We performed 12 cases of Robotic Bariatric Surgery performed through daVinci Robotic system (6 Sleeve gastrectomy, 5 Gastric bypass, 1 Revision of Sleeve to Gastric bypass) since January 2012. 60 Conventional laparoscopic surgeries (34 sleeve, 23 bypass, 2 sleeve revision, 1 bypass revision) performed during that time, served as controls. Operative technique, procedural time, errors, excess weight loss, resolution of co-morbidities, and cost analysis were observed.

Results: The operative technique was comparable in both the group. The mean operating time was 158 minutes (121–196) and 86 minutes (40 – 155) respectively. The mean docking time was 28 minutes by Robotic technique against 5 minutes by laparoscopic route. 1 case of stay suture perforation peritonitis was identified in Robotic group needing laparotomy and closure of perforation. 1 case of intestinal obstruction due to internal herniation was re-operated in the laparoscopic group. Average procedural cost was significantly higher in Robotic group.

Conclusions: Revision surgeries were technically simple with the advantages of intuitiveness of Robot. Gastric bypass by robot is technically more easy though cannot substantiate financial burden over the benefits. Sleeve gastrectomy will be beneficial only for the learning curve and hold no other advantage by Robotic surgery.

P.389 The Anatomy of a Bariatric Surgery Revision Clinic

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Introduction: Inevitably, some surgical procedures fail eg Vertical Band Gastroplasty (VBG), popular 20 years ago, is now failing, gastric bands require explanation, sleeve gastrectomy and bypass pouches are dilating. The Alberta (Canada) Provincial Obesity Management Strategy established a Bariatric Surgery Revision Clinic to respond to these needs.

Methods: Patients attending the Adult Bariatric Surgery Revision Clinic from assessment to revision surgery between August 2011 and December 2012 were included in a chart review (n = 24). Demographic, medical, and clinic utilization data were abstracted.

Results: Initial bariatric procedure was 14 ± 8.1 years prior, 20 patients had VBG, 75% were female (49.8 ± 10.1 years). BMI was 47.0 ± 11.5 (median 45). Patients were seen 1.2 ± 0.8 times by nursing, 2.4 ± 1.9 times by dieticians, 2.6 ± 2.3 by psychology, and further 0.9 ± 1.3 times by phone or telehealth. All patients had a barium study and endoscopy. 18 patients had surgery for weight recidivism, and 6 patients required surgery for mechanical problems. Patients were on 5 ± 2.9 medications, had 4.3 ± 1.9 co-morbidities in addition to morbid obesity, 13% had Type II diabetes, 25% sleep apnea, 25% GERD, and 63% depression. All VBGs were converted to an open stapled Roux-en-Y gastroplasty, the old mesh and fundus was removed. Hospital LOS was 6.6 ± 2.6 days. There were no deaths, 2 patients leaked, wound and respiratory complications were common. Close clinic follow-up continues.

Conclusion: Revision bariatric surgery clinic patients are complex demanding a multidisciplinary, planned and resource intensive approach to care.

P.390 Converting Gastric Banding to Gastric Bypass Should Be Performed in One Operation

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Introduction: Revisional surgery for failed gastric banding can be performed in single or sequential procedures. In this study we present single stage revisional surgery for failed gastric banding to gastric bypass.

Methods: A cohort of all patients undergoing revisional surgery to gastric bypass was subtracted from a prospectively held database. The database and computerized hospital notes were analysed.

Results: 265 Patients were treated for failed gastric banding. As standard procedure, we adopted the removal of the band and simultaneous performing a Roux-Y gastric bypass. 177 patients (66.8 %) were referred to our hospital for revisional procedure. Mean time between LAGB and LRYGB was 31 months and follow up after revisional procedure was 15 months.

Device related failure of gastric banding included dysmotility, slipping, erosion and pouchformation. In 38 patients (14,3 %), where conservative treatment was unsuccessful the band was removed. Revisional procedure occurred 2 to 3 months after explantation. Leakage of the gastrojejunal anastomosis occurred in seven patients, of which two occurred after two step procedures (5,3 %) and five after a single step procedure (2,2 %)($p > 0,05$). No differences were seen in minor morbidity.

No mortality was observed. % EBML 15 months after revisional procedure was 45,6% (range 14-159%). %EBML from gastric banding until 15 months of follow up after revisional procedure was 58 % (range 7 – 154%).

Conclusion: In the treatment of failed gastric banding simultaneous band removal and revisional gastric bypass is feasible and save.

P.391 Clinical Outcomes of Bariatric Revisional Procedures: Comparison with Primary Surgery

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Introduction: The main indications to perform bariatric revisional surgery are insufficient weight loss (IWL) and/or weight regain (WR) and adverse effects due to the primary procedure. The aim of our study is to present clinical outcomes of patients submitted to revisional procedures by our team.

Method: Retrospective cohort study of all patients undergoing to bariatric revisional interventions by the same group. Description of demographics and comparison of clinical outcomes. Primary endpoint: excess BMI loss (%EBML). T-test for continuous variables.

Results: Between March 2008 and April 2012, 15 patients (1.2% of the entire cohort) required a revisional procedure, 13 because of IWL and/or WR and 2 because of

symptomatic gastroesophageal reflux. 10 female, mean preoperative age 43.2 (± 10.9) years and BMI 37.7 (± 6.5) kg/m². Procedures performed: conversion from Laparoscopic Gastric Banding (LGB) to Laparoscopic Sleeve Gastrectomy (LSG) in 9 cases, Laparoscopic Gastric Bypass (LGB) redo in 2 cases, conversion from LSG to LGB in 2 cases, LSG redo in 1 case and repositioning of LGB in 1 case. Mean time between primary and revisional procedure 37.9 (± 18.4) months. There was no postoperative morbidity nor mortality in this group. Mean %EBML 1 year after surgery was significantly lower in the revisional group compared to the primary surgery group (62% vs 84%, $p < 0.005$). Mean follow-up in the revisional group of 36 (range: 8–57) months.

Conclusion: In our experience, revisional surgery after a primary bariatric intervention is not frequent and its results in terms of %EBML are worse than patients submitted to primary bariatric interventions.

P.392 Redo after Redo: Is it Safe?

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Introduction: Revisional bariatric surgeries are common challenge for the surgeon and for the patient. Despite that, the redo surgeries after redo bariatric surgeries are another bigger challenge. This presentation is to evaluate the safety of the redo after the revisional bariatric surgeries.

Method: Retrospective review of the records of all the patients who had revisional bariatric operations in last three years, 1 Jan 2010 to the end of 2012. All the operations were done by the same surgeon.

Results: The total bariatric operations were done in this period were 806, out of them were 68 (8.4%) operations were revisional bariatric operations. Out of these 68 operations there were 9 (13.2%) patients had redo after redo operations or 1.1% of all bariatric operations in three years were redo after redo. 6 patients were operated for weight regain 3 patients for complications mainly sever heart burn due to gastro-esophageal reflux. 6 patients had revision of the gastric bypass, 2 patients had bilio-pancreatic diversion and one patient have sleeve gastrectomy. There is no mortality, 2 wound infections at the reservoir site, one case had post-operative pouch bleeding treated conservatively, and no leak. The early average excess body weight loss was 30.5% in first 3 months.

Conclusion: Redo after redo bariatric surgeries are safe and feasible. The main indications for these operations are weight regains and/or complications like GERD. The effectiveness of these operations to reduce the weight needs long follow up and more patients to confirm that.

P.393 The Laparoscopic Intestinal Bipartition: A New Model of Bariatric Surgery with Rapid Efficacy Against Metabolic Comorbidities

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Introduction: Bariatric surgery is the most effective treatment for morbid obesity with comorbidities, it improves excess weight loss (EWL) and glucose homeostasis significantly, restrictive procedure and malabsorption are not the only two induced mechanisms. The purpose of this study was to evaluate the Laparoscopic Intestinal Bipartition (LIB) in feasibility efficiency and reversibility.

Method: Four patients (three women and one man) were operated by LIB for morbid obesity (BMI > 35 kg/m²) with type II diabetes as initial surgery (one patient) or after a recurrence post sleeve gastrectomy (three patients). A mechanical stapler of the middle of the small intestine, an anastomosis of the proximal stump to the terminal ileum 20 cm before the cecum, and an anastomosis of the distal stump to the jejunum 20 cm after the Treitz' s angle

were done. The assessment of EWL and comorbidities was made six and twelve months postoperatively.

Results: The mean operative time was 40 min. At six months EWL was greater than 50%, diabetes was controlled with lower dosage of drugs and normalization of HbA1c(4/4), improvement of cholesterol(4/4), triglycerides(4/4), hypertension(2/2), steatosis(2/2) and sleep apnea(4/4). At one year, results were comparable to six months follow up.

Conclusion: LIB is a reversible model of metabolic surgery effective for obesity and comorbidities. LIB gave a reduction in absorption without malabsorption probable mechanism as an acceleration of the small bowel and potential induction of ileal brake with increasing GLP1. A larger series of LIB must be evaluated to determine the role of LIB in bariatric surgery.

P.394 Evidence-Based Reflections on Robotic Assistance for Minimally Invasive Bariatric Surgery

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Introduction: Robotic assistance (RA) introduction into minimally invasive surgery has provided advantages making possible to perform more complex techniques by laparoscopy. Several bariatric surgery teams have incorporated robotic procedures and published results are controversial. We have tried to evaluate the improvement provided by RA to bariatric surgery outcomes, on the light of evidence-based medicine.

Method: By analysing literature, we have tried to answer the following questions: Which procedure(s) may benefit more from RA (if so)? Do exist technical advantages in using RA in any of the bariatric procedures? Have postoperative clinical differences been demonstrated? Are there any evidence on reduction of short and long term complications by RA application? Does RA have any influence on the steep learning curve of bariatric minimally invasive surgery? What about cost?

Results: Although there is a great majority of experience in Roux-en-Y gastric bypass, recently reports on sleeve gastrectomy have appeared. There is no consensus about spending more or less surgical time compared to laparoscopy, and some groups have reported conversions to open related to robotic arms. Overall short and long term complications rate seems to be similar between robotic and laparoscopic approaches, but there are teams reporting less incidence of anastomotic strictures and leakage when using robot. The learning curve for robotic gastric bypass is considered to be shorter than for laparoscopic gastric bypass. There are studies demonstrating that RA bypass is cheaper when compared to laparoscopic and to open approaches.

Conclusions: Robotic assistance seems to have provided some advantages to minimally invasive bariatric surgery.

P.395 Comparison Between the Results of Laparoscopic Sleeve Gastrectomy and Laparoscopic Roux-en-Y Gastric Bypass in the Indian Population: A Retrospective 3 Year Study

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is now emerging as a standalone bariatric procedure in the world. Early results suggest that weight loss and resolution of comorbidities with LSG is comparable to laparoscopic Roux-en-Y gastric bypass (LRYGB).

Methods: A retrospective comparative analysis was done of 250 patients in each arm who underwent LSG and LRYGB from October 2009 to March 2010. Mean age in LSG group was 39.6 years (SD ± 11.85) and that in LRYGB group was 44.9 years (SD ± 13.58). Mean BMI was 44.6 kg/m² (SD ± 9.8) in LSG

group and was 43 kg/m² (SD ± 12.5) in LRYGB group. In the LRYGB group 45% patients had type 2 diabetes, 45% were hypertensive and 11% suffered from dyslipidemia as compared to 25% diabetic, 39% hypertensive and 17 % dylipidemic in the LSG group. The resolution of comorbidities, percentage of excess weight loss (EWL), and complications were studied at 1, 2 and 3 years in this study.

Results: At the end of 1 year EWL% in the LRYGB group was 62% as compared to 76.14% in the LSG group. At the end of 3 years EWL% in LRYGB was 47.5% as compared to 55.3% in LSG group. Though early resolution of type 2 diabetes was seen to be better in the LRYGB group, the results matched up at 1 year and were comparable at the end of 3 years. Resolution of hypertension was comparable whereas that of dyslipidemia was better in the LRYGB group. There was increased incidence of GERD in LSG patients at the end of 1 year. Both groups had a comparable complication rate of < 1%. There was no mortality in either group.

Conclusion: At the end of 3 years LSG shows better results in terms of %EWL and has a comparable resolution rate of co-morbidities. There is a marginally increased incidence of GERD after LSG as compared to LRYGB.

P.396 Sleeve Gastrectomy with Jejunioleal Bypass Results of a New Technical Procedure

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Introduction: The Sleeve gastrectomy (SG) technic procedure is being increasingly employed in the surgical treatment of morbid obesity. Its action mechanism was therefore linked to the elimination of ghrelin-producing area, according to the resection of gastric fundus and restriction due to the removal of approximately of the stomach. It is therefore a restrictive procedure. Intending to maximize the effects of the SG, not only in inducing weight loss after surgery, but enhance the maintenance of lean weight in the long term, and add a metabolic component, we proposed the association of jejunioleal bypass to SG. The aim of this study is to report the results of SG with jejunioleal bypass.(SGB)

Method: 76 obese patients were operated associated to SG with a latero-lateral jejunioleal bypass performing the anastomosis between the jejunum at 50 cm from Treitz angle and the ileum at 120 cm from ileocecal valve, by laparoscopy.

Results: The 76 patients consisted of 57 women and 19 men, aged between 20 and 64 years, with an average BMI of 41.22, with follow-up between 12 to 60 months, with a mean of 28 months. The loss of excess weight was 28.15 to 111.93% during this period, with an average of 62, 33%. In nine patients who underwent SGB after therapeutic failure of the adjustable gastric band, was observed a reduction of the excess weight ranging from 55.45 to 104.18 %. About 30% of the patients had comorbidities such as hypertension and diabetes and all of them stopped using the medications to control comorbidities before six months after operation. The rate of complications was 1,3% due to internal hernia, and 6,5% have to undo the jejunio-ileal bypass due to diarrhea.

Conclusion: We can conclude that SGB is a safe procedure adding probably a metabolic effect to a restrictive procedure, with almost no mal-absorption.

P.397 Bariatric Surgery in the Elderly Over 60 Years: Results After Sleeve Gastrectomy and Gastric Bypass

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Introduction: The prevalence of obesity is increasing gradually, even in older age groups. By the year 2030–2035 more than 20% of the U.S. adult population and more than 25% of Europeans will be aged 65 and more. After 60 years, the reference shall be laid on a case by case basis depending on the physiological age and comorbidities.

Methods: From July 2003 to December 2012, a prospective collection of data from patients aged 60 and over was carried out whatever the surgical procedure.

Results: Hundred and thirteen patients comprise the cohort: 51 sleeve gastrectomy, gastric bypass 62 and no gastric banding.

The mean follow-up was 42 months. In the sleeve gastrectomy group, the average age was 63.2 ± 0.9 years (60–71), 35 women to 16 men, mean BMI 45.9 ± 1.6 kg/m² (35.5–71). Eight patients had a gastric banding before. There was no mortality. The morbidity rate is 9.8%: 3 fistulas, one wound infection and one respiratory distress.

In the bypass group, the average age was 62.02 ± 0.5 years (60–71), 44 women to 16 men, the mean BMI of 48.5 ± 2.9 is (30.3–60.2). Sixteen patients had have a gastric banding before, 2 patients with a Mason. There was no mortality. The rate of postoperative morbidity is 6.4%: 2 lower gastrointestinal bleeding, 1 wound infection and 1 pneumonia. We note 4 anastomotic ulcers remote surgery.

Here are the results of weight loss:

	6 months	1 year	3 years	5 years
Sleeve BMI in kg/m ²	37.2 ± 2.8	34.4 ± 2.2	34.8 ± 3.4	34.2 ± 2.8
Sleeve %EWL	48.7 ± 7.9	59 ± 7.4	58.7 ± 14.8	62.8 ± 10.1
Bypass BMI in kg/m ²	36.4 ± 3.0	32.3 ± 2.6	33.1 ± 2.5	32.1 ± 3.6
Bypass %EWL	51.4 ± 6.6	77.4 ± 27.2	66.4 ± 8.2	69.3 ± 16

The rate of comorbidities resolution was 30%. The improvement in cardiovascular diseases is the most important; there is little improvement in joint diseases.

Discussion: Bariatric surgery in the elderly does not emphasize either morbidity or mortality. Weight loss is satisfactory. The risk-benefit ratio can help expand the indications for surgery.

P.398 International Bariatric Club: Impact of Social Media on Global Bariatric Education

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Introduction: Social Media (SC) play an increasing role in global communication. International Bariatric Club (IBC) was created to integrate, stimulate and exchange experience globally and uses Facebook (FB) to achieve these goals. The Close Group feature was use to create a professional IBC forum (access per invitation, anyone can see the group and who is in it, only members see posts).

Material and Method: An electronic survey was sent to 777 members of IBC. The following features of FB were evaluated: 1. Global access. 2. Ease to use. 3. Multimedia support. 4. Speed of communication. 5. Privacy. 7. Professionalism. 8. Intellectual property. A detailed analysis of activities and functionality of IBC Group was performed.

Results: 385 Club Members (49.5%) responded as follows (positive answers in brackets): Global access (90%), Ease to use (73%), Multimedia support (82%), Speed of communication (88%), Privacy (62%), Professionalism (71%), Protected Intellectual Property (20%). The major concern was protection of privacy and intellectual property. Group activities were measured: 777 members

from all continents and 21 countries. The Group was created in Nov 2010; since then a total of 2340 posts were created with the average of 7 per day.

Conclusion: Social Media may provide an effective tool for a rapid and effective communication for the purpose of professional bariatric education. Questionable privacy and intellectual protection should be reasonable and carefully off set by its massive range and immediate global spread.

P.399 Perioperative Outcomes in High-Risk Patients Following Bariatric Surgery – Lessons from a Specialist Quaternary Supra-Regional Referral Centre

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Introduction: There is limited data on peri-operative outcomes in high-risk patients undergoing bariatric surgery. We prospectively evaluated our experience of high-risk elective patients referred to our quaternary supra-regional center undergoing bariatric surgery who were admitted to a high dependency unit (HDU) as a part of their planned post-operative care.

Methods: Between May 2009 and October 2012 a total of 60 high-risk patients (defined as patients requiring elective admission to HDU post-operatively due to pre-existing co-morbidities) underwent bariatric surgery at our institution. Patients were classified according to their reason for requiring their HDU admission: cardiovascular disease; CPAP-dependent sleep apnoea; significant renal impairment and other reasons. The peri-operative outcomes were prospectively recorded and compared between the groups.

Results: Of the 60 patients (M: 24, F: 36; average age: 50 ± 1.4 years), 25 had cardiovascular disease; 24 had CPAP-dependent sleep apnoea; 5 had significant renal disease and 6 had other pathologies. The mean overall hospital length of stay 4.0 ± 0.6 and the overall complication rate 16.6%. The inter-group comparisons are summarized below:

	Sleep apnoea	Cardiovascular	Renal	Other
Number of patients	24	25	5	6
Age	50 ± 2	52 ± 2	47 ± 5	46 ± 4
Pre-operative BMI	52 ± 2	52 ± 10	50 ± 2	51 ± 3
Gastric bypass	13	13	0	5
Sleeve gastrectomy	8	11	4	2
Gastric band	1	0	0	0
Revision surgery	1	0	0	0
Balloon insertion	1	1	1	0
Total length of stay (days)	4.6 ± 1.0	3.5 ± 0.3	4.0 ± 1.0	3.3 ± 0.6
HDU length of stay (days)	2.0 ± 0.5	1.4 ± 0.1	1.3 ± 0.4	1.6 ± 0.3
Readmission rate to HDU	2	0	0	0
Complications in 30 day post-operative period	7	2	0	1
Readmission rate post-discharge	1	0	0	0

There is a significant increase in the overall complication rate in CPAP-dependent sleep- apnoea patients as compared with the rest of the cohort($p=0.02$).

Conclusions: High-risk patients can safely undergo bariatric surgery in specialised centres with good peri-operative outcomes. The presence of CPAP-dependent sleep apnoea is a potential adverse prognostic indicator.

P.400 LAGB for PCOD, Infertility Obese Females: Was It the Right Choice?**PRESENTER: S. Poonam¹**Co-authors: S. Pallavi¹, G. Jayashri¹, S. Shashank¹¹Laparo-Obeso Centre, bariatrics, Pune-India*Introduction:* PCOD, associated with reproductive and metabolic problems, is known to improve with weight loss.*Method:* 33 of 60 females with irregular menses and undergone LAGB, from January 2005 to December 2010, were diagnosed PCOD (Rotterdam criteria) with or without infertility. 15 Married, 18 Unmarried. Married 5 had previous pregnancies, with 3 on secondary infertility, while 10 on primary infertility treatments. Age 14 to 40 year, BMI 33 to 52 kgs/m². Patients followed for weight loss, regularization of menses, success of conception, natural or assisted. Band emptied on pregnancy. Retrospective analysis done Jan 2013- a follow-up of 2 to 5 years.*Results:* All patients had regularization of menses by 3 to 5 months. Of 15 married patients- 1 with secondary infertility had natural conception pregnancy and of 10 primary infertility, 4 conceived 3 natural, 1 assisted. At the end of study period of the 18 unmarried patients, status of 5 unknown while 9 were married- 4 recently and 5 had natural conception. All 10 pregnant patients did not require additional nutrition and had full term normal delivery, except for 2 caesareans. All babies were normal weight with no abnormalities. 5 bands removed with 3 converted to LSG, 2 refixed for slippage.*Conclusion:* LAGB, which is losing popularity for treatment of morbid obesity, was however found to be useful for child bearing age group females with PCOD, without long waiting period for conception, as with other procedures, nor need for additional nutritional challenges to the mother and baby.**P.401 Obese Morbidity Can Be More Serious than Morbid Obesity in Asians****PRESENTER: S. Shashank¹**Co-authors: S. Poonam¹, T. Jayashree²¹Laparo Obeso Centre, Bariatric surgery, Pune-India²Ruby Hall Clinic, Bariatric Surgery, Pune-India*Introduction:* Metabolic syndrome and type 2 diabetes are seen to occur at a lower Body Mass Index (BMI) among Asians.*Materials and Methods:* 50 patients with BMI lower than 28 kg/m² who visited the Laparo Obeso Centre with at least two of the following: Central obesity, hypertension, dyslipidaemia, type 2 diabetes were included. BMI, waist circumference and body fat % were measured by DXA were studied and analysed. There were 39 females and 11 males. The probable CV risk scores of these patients were calculated by using UKPDS in diabetics and Farnigham in the non-diabetics. The mean BMI was 24.88 kg/m².*Results:* All of them had a waist circumference above normal. The mean waist circumference for females was 99.8 cm and males was 103 cm. The mean body fat percent was 44.5 The risks calculated correlated more with body fat % and waist circumference than its BMI.*Conclusion:* High body fat percentage with visceral obesity in Asians is responsible for the onset of Type 2 diabetes / metabolic syndrome even at a lower BMI. It may be ideal to look at the body composition rather than BMI especially while treating patients with type 2 diabetes and/ or metabolic syndrome having a BMI less than 30 kg/m².**P.402 Prospective Evaluation of Quality-of-life Before and After Laparoscopic Sleeve Gastrectomy****PRESENTER: V. Charalampakis¹**Co-authors: G. Bertias², M. Daskalakis¹, J. Romanos¹, E. de Bree¹, D. Peirasmakis¹, J. Melissas¹¹Heraklion University Hospital, Bariatric Unit, Heraklion Crete-Greece²Heraklion University Hospital, Department of Internal Medicine, Heraklion Crete-Greece*Introduction:* Morbid obesity adversely affects quality of life (QoL) even in young adults. QoL evaluation has gained attention as an outcome measure in bariatric surgery. This assessment is performed with questionnaires and visual analogue scales for patient satisfaction (VAS). Prospective data of QoL changes after Laparoscopic Sleeve Gastrectomy (LSG) in the literature are still poor.*Method:* Consecutive morbidly obese patients admitted for LSG, over a 2-year period, were prospectively enrolled. The validated Greek version of the Moorehead-Ardelt II obesity-specific questionnaire (MAII) and a 10-point VAS were offered preoperatively and at 6, 12 and 24 months postoperatively. Full somatometric and co-morbidities profile was recorded at all-time points.*Results:* A total of 111 patients (60 females, 51 males, mean age 36.8±9.2) were included. There was no mortality and the total complication rate was 15.3%. The mean preoperative BMI was 49.1±7.5kg/m² and %EBL was 51.1±14.9% at 6, 64.2±17.9% at 12 and 66.4±18% at 24 months postoperatively. All co-morbidities were significantly ameliorated. The mean MAII total score was 0.40±1.30 preoperatively and increased to 1.75±0.83, 2.18±0.80 and 1.95±0.71 at 6, 12 and 24 months postoperatively (p<0.001). The mean postoperative VAS score was 9.1±1.1, 9.2±1.1 and 9.0±1.3 respectively. The improvement in MAII score was more sustained in females at 24 months, although end BMI was comparable between the two genders. The degree of BMI reduction correlated weakly with QoL improvement.*Conclusion:* LSG is a safe and effective bariatric operation with acceptable morbidity, satisfactory and sustained weight loss and significant improvement in QoL. Analysis of QoL is important for a complete bariatric outcome evaluation.**P.403 Frequency of Dietary Advice Prior To Bariatric Surgery Improves Weight Loss Outcome at 12 Months****PRESENTER: A. Brown¹**Co-authors: T. Arora², M. Richardson³, R. Nijjar³, R. Khaki³, V. Patel, A. Wright³, G. Abernethy¹, S. Taheri¹, P. Super³¹Heart of England NHS Foundation Trust, Specialist Weight Management Services, Birmingham-United Kingdom²University of Birmingham, Clinical and Experimental Medicine, Birmingham-United Kingdom³Heart of England NHS Foundation Trust, Upper GI and Minimally Invasive Surgery Unit, Birmingham-United Kingdom*Background:* Frequency of pre-operative contact has been shown to improve weight loss outcome following bariatric surgery. However, it is currently unclear how many pre-dietary contacts are required to produce significant chronic weight loss following bariatric surgery.*Methods:* A retrospective case-control study of 455 patients (mean age 45.1±11.0years, females [71.8%], mean BMI 51.6±8.4Kg/m²) who underwent bariatric surgery from 2010–2012 was conducted. We examined if the frequency of dietary advice prior to surgery (intervention=381; control=97) from pre-operative assessment to surgery improved weight loss after 12 months of undergoing bariatric surgery. No significant differences were found between groups for sex, ethnicity, operation type and age.*Results:* Increased frequency of contacts between pre-operative assessment and surgery produced significantly greater weight loss at 12 months (=0.17, p=0.006). Further analyses adjusted for age, sex, ethnicity, mode of contact and diabetes showed that 3 contacts was statistically significant (=0.15, p=0.02). A mean weight loss of 39.6±24.4kg was achieved for those receiving 3 contacts compared to 29.9±17.7kg for 2 contacts (p=0.02). Age and male gender were independent predictors of weight loss at 12 months (=1.4, p=0.19 and =0.18, p=0.002, respectively).*Conclusion:* Increased frequency of dietary reinforcement prior to surgery produces a statistically and clinically significant weight loss at 12 months. Patients should have a minimum of 3 contacts to produce this effect. Finally younger age and male gender produced better weight loss outcomes at 12 months, which could help predict weight loss outcomes following surgery.

P.404 The Effects of Laparoscopic Gastric Plication and Sleeve Gastrectomy on Loss of Weight in Our First Experiences

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Introduction: GP and SG are successful bariatric surgery techniques which decrease the gastric volume. In this study we searched the effects of SG and GP on loss of weight and BMI of patients on their 1.,3.,6. and 12. Month follow-ups.

Outcomes: From November 2010 327 patient (median age: 35,82 (min:14; max:66), female n=222 (68,88%); male n=101 (30,88%) underwent GP and SG. Patients preoperative average weight is 126,78kg, average BMI is 44,38kg/m². Patients average loss of weight and decrease of BMI is respectively: 1st month 11,15kg(8,79%) (GP10,91kg(8,82%)-SG 12,46kg (9,56%)3,9 kg/m² (8,78%) GP 3,8kg/m²(8,72%)- SG 4,43kg/m²(%9,24)); 3rd month 20,3kg(16,01%) (GP 19,82kg(16,03%)- SG 23,03kg(17,67%)) - 7,12kg/m² (16,04%) (GP 6,92kg/m²(15,89%)-SG 8,18kg/m²(17,58%)); 6th month 27,6kg (21,76%) (GP 26,85kg(21,72%)- SG 32,51kg(24,94%)) 9,57kg/m²(21,56%)(GP 9,32 kg/m² (21,2%) - SG 11,27kg/m²(24,22%)); 12th month 28,4kg(22,4%) (GP 28,91kg(23,39%)-SG 31kg(23,78%)) - 9,57kg/m²(21,58%) (GP 9,51kg/m²(21,84%)-SG 0,88kg/m²(23,38%)).

Results: GP and SG are the operations that reduce the gastric volume and help patients to lose weight. In our study; weight loss of the patients are statistically significant. After 6th month follow-up the lose of weight decreased in patients. We think that the main reason of this decrease, is the habitual life standarts of the patients that they couldnt change and as a conclusion increase in the gastric volume is inevitable.

P.405 Preoperative Upper Endoscopy in Patients Undergoing Bariatric Surgery: A Systematic Review

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Background: Preoperative upper endoscopy is a routine procedure in most bariatric surgery centers. The main rationale is to diagnose the unexpected pathologies that can alter the surgical procedure. However, there is no cumulative data about the incidence of those unexpected findings in morbidly obese patients. The aim was to examine all the published results of upper endoscopy in patients undergoing obesity surgery.

Methods: Electronic searches of the PubMed, Ebsco and Google databases were carried out in November 2012 using the keywords for upper endoscopy before bariatric surgery. No restrictions were made and congress presentations were searched as well. A total of 14 articles were selected for inclusion in the analysis.

Results: A total of 4190 cases were analyzed. Most of the patients (99.8%) had normal or benign endoscopic findings that did not alter the surgical procedures. Eight gastroduodenal malignancies (0.2%) were incidentally detected during routine upper endoscopy. They included one early gastric cancer, one tubular adenoma with low-grade dysplasia, one gastrointestinal stromal tumor, three carcinoids and two neoplasms not mentioned in detail. Additional procedures to the obesity surgery were required in all of those cases.

Conclusion: Most of the findings of routine preoperative upper endoscopy include normal or benign pathologies that did not change the surgical procedure. Almost only one of every 500 patients who had routine upper endoscopy was diagnosed as incidentally detected tumors (mainly carcinoids). The remaining every 499 patients had little or no benefit from routine upper endoscopy. More studies including the cost Analysis should be done to address this issue.

P.406 Does Gastric Bypass Surgery for Severe Obesity Predispose to Vitamin D and Calcium Deficiency?

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Introduction: Gastric bypass is an effective treatment for obesity, but can predispose to nutritional deficiencies. There is currently no consensus concerning the effects of gastric bypass on vitamin D status. We aimed to determine whether this surgery predisposes to vitamin D or calcium deficiency in New Zealand women.

Methods: Serum calcium, phosphate, parathyroid hormone, and vitamin D were measured and compared in two groups of women. The groups were established from a patient database. Group 1 had gastric bypass surgery 1–2 years previously, and Group 2 had surgery 5–9 years previously.

Results: 102 patients participated in the study. There were no differences between age at surgery, or pre and post-operative BMI. Adjusted serum calcium levels were the same in the two groups (2.31 ± 0.10 vs 2.28 ± 0.08), as was serum PTH (5.34 ± 2.12 vs 5.25 ± 2.43) and serum vitamin D (68.77 ± 23.89 vs 68.02 ± 23.40). The percentage of vitamin D insufficient patients was 21.4% in Group 1 and 17.3% in Group 2 (p= 0.69). These percentages are lower than in a previous survey of the general population of NZ women, in which 52% were found to have vitamin D levels lower than 50nmol/L.

Conclusion: This study provides no evidence that vitamin D or calcium supplements are needed routinely in NZ women following gastric bypass. However, considering the prevalence of vitamin D insufficiency in the NZ population it is sensible that all women around the age of menopause have markers of bone metabolism checked.

P.407 The Effect of Pre-operative Weight Loss on Liver Volume and on the Outcome of Bariatric Surgery

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Introduction: Morbid obesity is associated with non-alcoholic fatty liver disease. Large fatty livers make retraction and visualization of the hiatus difficult and tend to bleed easily. Pre-operative liver reduction diets are widely used but their clinical benefits are not clear.

Method: A systemic review of the literature was performed to investigate the effects of pre-operative diets on the liver as well as the early outcome after bariatric surgery.

Results: 7 studies were found in the literature that compared liver volume before and after acute diet-induced weight loss in patients undergoing bariatric surgery. These studies had small patient numbers (14–50 patients) and variable diet duration. Most used a low or very low calorie diet (VLCD).

In the studies, the diet was associated with significant reduction in liver volume and liver fat content. The only study with a control group reported no significant difference in operating time or hospital stay when compared to the VLCD group. The latter group was found to have a higher incidence of anastomotic ulcers.

One controlled, single-blind study compared VLCD (n=137) with a control group (n=136) but no liver imaging was used. Although surgeons found the operation easier in the VLCD group, there were no differences in operating time and intra-op bleeding. There was a reported increase in complications in the control group at 30 days.

Conclusion: Although pre-operative diets are widely used, there is limited evidence that they improve outcome. There may also be concerns regarding cost, compliance and the catabolic effects of a prolonged diet.

P.408 The Villinger-Box: A Basic Bariatric Supplementation Kit that Works!

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Introduction: On IFSO2011 we presented the so-called “Villinger-Box”, a basic supplementation kit for bariatric patients with all the recommended vitamins, iron and calcium inside. In our certified bariatric center almost all patients use this box as supplementation in the first year after surgery. This study examines the laboratory data of patients with standard LRYGB and LSG in their first year of follow-up.

Method: In our follow-up we collected data from 58 patients with LRYGB and 27 patients with LSG, claiming to take the “Villinger-Box” as recommended. The Villinger-Box contains tablets with calcium-citrat, iron-fumarat, vitamin d, multivitamin and ampules of vitamin B₁₂ as well as a description of daily intake. The collected data concerned measured values of haemoglobin, iron, ferritin, vitamin B₁₂, folic acid and vitamin d at 3, 6, 9 and 12 months after surgery.

Results: The data for first year after LRYGB as well as LSG shows normal values of the measured items at any time of follow up.

Conclusion: The data shows that the “Villinger-Box” works as a basic supplementation kit. There was no anemia, no deficiency of measured vitamins at any time of follow up. Besides this simple kit increases patients’ compliance for supplementation-intake and patients’ satisfaction.

P.409 Nutritional Intake and Hunger and Satiety During Ramadan Fasting in People Who Have Undergone Bariatric Surgery

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Introduction: Fasting in the month of Ramadan poses a challenge to people who have undergone bariatric surgery. A total fast (all forms of nourishment including liquids) during long summer days puts these patients at risk of dehydration and poor calorie and nutrient intake.

Methods: We studied 230 individuals who had undergone bariatric surgery. We undertook telephone survey of 24-hour food recall, appetite and satiety scores and medication use during and after Ramadan. We estimated calorie, macronutrient and fluid intake. Comparative statistical analysis was performed separately for men and women due to physiological variation in baseline characteristics.

Results: We studied 186 (80.9%) women and 44 (19.1%) men with a mean (SD) age of 35.0 (10.2) and 36.8 (9.7) years (non-significant) and pre-operative BMI 44.0 (7.4) and 48.3 (8.1) kg/m² (P<0.002), respectively. Common co-morbidities in women and men were type 2 diabetes (16.1% and 11.4% respectively) and hypertension (17.2% and 25.0%); types of bariatric surgery were sleeve gastrectomy (89.2% and 93.2%), gastric bypass (6.5% and 2.3%), gastric banding (3.2% and 2.3%) and other procedures (1.1% and 2.3%); the majority observed Ramadan fasting (84.4% and 90.9%). Both women and men reported feeling less hungry and a preference for savoury foods during Ramadan. Satiety scores were better during Ramadan in women but post-Ramadan in men. Total calories, protein and cholesterol intake were significantly lower during Ramadan in both women and men; women also had less dietary sodium intake during Ramadan. There was no difference in intake of fluids.

Conclusion: There were notable differences in eating behaviours during Ramadan. Patients should be advised on adequate dietary protein intake during fasting.

P.410 Impact of Dieting Before Bariatric Surgery on Post-Operative Weight Loss

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Introduction: It is debatable whether good pre-operative weight loss is a reliable predictor of eventual post-operative weight loss. This study aimed to examine the relationship between pre-operative and early post-operative weight loss in patients undergoing bariatric surgery at our centre.

Methods: All patients undergoing primary bariatric surgery between Jan 2011 and Dec 2012 were included in the study. Exclusions included re-operation, revisions or conversions to another type of bariatric procedure. Prospectively collected data points included patient demographics, weight at first surgical consultation, immediate pre-operative weight and weight at 6 weeks follow up.

Results: 456 patients (128 males, 328 females; mean age 45.7±10.7) had surgery over this time period. 306 patients underwent Laparoscopic Gastric Banding, 112 RNY Gastric Bypass and 38 Sleeve Gastrectomy. The mean pre-operative BMI and weights for these patients were 2.7±8.7 kg/m² and 147.5±29 kg respectively. The mean % excess BMI loss (%EBL) and weight loss on the preoperative diet were 8.3±8.6 kg/m² and 6.8±7.1 kg respectively. The %EBL at 6 weeks following surgery was 17.2±8.9. There was no correlation between the %EBL pre-operatively and at 6 weeks post operatively (Spearman correlation r=0.16).

Conclusion: Successful pre-operative weight loss did not predict early weight loss outcomes following bariatric surgery. Success after bariatric surgery is not dependant on pre-operative weight loss and patients may still achieve good results after bariatric surgery following inadequate pre-operative weight loss.

P.411 Effectiveness of Prolonged Pre-operative Dieting Prior to Bariatric Surgery Results from a Large Bariatric Centre in the UK

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Introduction: Low calorie diets and temporary use of intra-gastric balloons are accepted methods of achieving pre-operative weight loss. In our centre we advocate low calorie diets for all patients undergoing elective bariatric surgery to reduce liver mass and improve surgical access. In this study, we analyse the results of our pre-operative weight loss program.

Methods: A consecutive series of patients undergoing primary bariatric surgery between January 2011 and December 2012 were included for analysis. Patients were prescribed a low calorie diet of 800–1000 kcal/day prior to bariatric surgery. Duration of diet was dependent on initial BMI and presence of diabetes; 2 weeks for BMI 35–50 kg/m², 4 weeks for BMI 50–60 kg/m² and 6 weeks for BMI >60 kg/m². All diabetic patients were advised to diet for 6 weeks. Weights were collected at the first surgical consultation and within 2 weeks prior to surgery.

Results: 456 patients underwent bariatric surgery; 306 patients had Laparoscopic Gastric Banding, 112 RNY Gastric Bypass and 38 Sleeve Gastrectomy. The mean pre-operative BMI and weight for these patients were 52.7±8.7 kg/m² and 147.5±29 kg respectively. The overall mean weight loss prior to surgery was 6.8±7.1 Kg. Weight loss for the three BMI groups was 4.1±5.1 Kg, 7.3±7.2 Kg and 11.1±8 Kg.

Conclusion: At our centre, pre-operative diets are an effective method of achieving good pre-operative weight loss. Interventions such as intragastric balloons are not required with such pre-operative prolonged dieting.

P.412 Vitamin B12 Substitution After Gastric Bypass Surgery – Sublingual or Intramuscular?

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Background: Gastric bypass surgery requires a lifelong supplementation of vitamins and micronutrients. Vitamin B12 (Cobalamin) is necessary for the growth and replication of all body cells and the normal functioning of the nervous system. Deficiency of B12 causes anemia and neurologic symptoms. The aim of this study was to determine which way of vitamin B12 supplementation (sublingual or intramuscular) is more effective to prevent deficiency.

Methods: We included 16 patients after gastric bypass surgery (7±3 months), 2 male and 14 female. Nine patients took a total of 500 g vitamin B12 sublingually every day (Vitamist Spray 4x2 puffs) and 7 patients took 1000 g vitamin B12 intramuscularly bimonthly (Erycytol depot 1mg ampullae). Laboratory data were evaluated before and 3, 6, 9 and 12 months after surgery. During the postoperative course the patients received a multivitamin mineral supplementation on a daily basis.

Results: Vitamin B12 levels before supplementation in the group with sublingual spray were mean 222±55pmol/l, at 3 months mean 384±162pmol/l, at 6 months mean 319±172pmol/l, at 9 months mean 526±395pmol/l and at 12 months mean 451±321pmol/l. One patient was switched to intramuscular supplementation after 6 months because of incompliance. Vitamin B12 levels before supplementation in the group with intramuscular injection were mean 216±47pmol/l, at 3 months mean 456±281pmol/l, at 6 months mean 572±472pmol/l, at 9 months mean 414±295pmol/l and at 12 months mean 640±560pmol/l.

Conclusion: Both ways of supplementation prevented Vitamin B12 deficiency effectively. Differences could be seen in compliance of the patients. 78% of the spray users were unsatisfied with the high frequency of the application; nevertheless 67% would recommend it. To increase patient's compliance ease of use and patient's convenience are important features to be considered.

P.413 Persistence of Vitamin D Deficiency in Asians and Duodenal Switch Patients After Bariatric Surgery Despite Supplements

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Introduction: Bariatric surgery patients may have or develop Vitamin D deficiency after the operation. This study was performed to evaluate which patients are at particular risk of persistent Vitamin D deficiency despite adequate postoperative supplements.

Method: Retrospective data of age, ethnicity, and type of surgery, serum vitamin D levels and serum calcium levels was collected on Bariatric surgery patients (01.01.10 – 31.12.10) with 1-year follow up. All patients were prescribed vitamin D and calcium supplements. Results were tabulated and statistical analysis performed.

Results: 348 patients [age 45.7 ± 10.28 years (mean ± standard deviation); Male 75, Female 273; BMI (Body mass index) 54.3 ± 13] underwent Bariatric surgery over 12 months (236 LRYGB, 57 LSG, 12 LDS, 7 LAGB & 25 other). The preoperative serum level of vitamin D was 41.34 ± 22 (nmol/l) and serum calcium 2.39 ± 0.09 (mmol/l). There were significant differences in the serum Vitamin D level before the operation between Caucasian and African/Afro-Caribbean (p<0.05), but not in serum calcium levels. Postoperatively Asians continued to have significantly low levels of serum vitamin D (p<0.05) despite supplements. There was a significant improvement in vitamin D levels 1-year after LRYGB, LSG (p<0.05), but not after LDS (p>0.05). There was also

improvement in other surgical patients in serum Vitamin D levels but this did not achieve significance. There was no statistical change noted in serum calcium levels.

Conclusions: Asians and duodenal switch patients are more prone to vitamin D deficiency before and after Bariatric surgery, despite supplements.

P.414 A Double-Blind Prospective Randomized Controlled Trial Comparing Multivitamin Supplements After Roux-en-Y Gastric Bypass in Morbidly Obese Patients: VITAAL Study

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Introduction: After a Roux-en-Y Gastric Bypass (RYGB) there is an increased risk for nutritional deficiencies. Most common are iron, vitamin B12 and folic acid deficiencies. A new multivitamin supplement (WLS Forte, WLSF) adjusted for RYGB patients were developed based on published literature to reduce those deficiencies. The aim of this double-blind randomized controlled study was to determine the effectiveness of WLSF compared to standard multivitamin supplement (SMVS) after RYGB.

Method: Between June 2011 and March 2012, patients who were scheduled for a primary laparoscopic RYGB were randomized for SMVS and WLSF for a period of 1 year. WLSF holds higher nutrition's, e.g. vitamin B12 14000% RDA, iron 500% RDA, and folic acid 300% RDA. The SMVS consists approximately 100% RDA for all supplements. Primary outcome was 25% reduction of vitamin and mineral deficiencies 1 year after RYGB.

Results: In total 148 patients (74 in each group) underwent a RYGB procedure. Weight, BMI, sex and excess weight loss were similar for SMVS and WLSF (p>0.05). Mean serum levels for iron, vitamin B12, folic acid, and vitamin D were similar at baseline in both groups (p>0.05). Less vitamin B12 and ferritin deficiencies were observed in WLSF compared to SMVS (p<0.05). Within 12 months, mean serum vitamin B12 levels increased (+112.8 pmol/l) in WLSF, and decreased (4.9 pmol/l) in SMVS (p<0.05). In both groups, no adverse events concerning the supplement usage occurred.

Conclusion: Optimized multivitamin supplement, WLS Forte, is safe and resulted in less vitamin B12 and folic acid deficiencies after RYGB.

P.415 An Overview of Excessive Body Weight Loss Following Gastric Bypass Surgery - Our Hospital Experience

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Introduction: Gastric bypass is considered the gold standard in bariatric surgery and is deemed successful if 70 - 80% excess body weight (EBW) loss is achieved between 1–2 years post-surgery. Excessive excess body weight loss may lead to malnutrition. We aim to analyse the factors associated with excessive excess weight loss (more than 80% EBW) at 24 months following surgery.

Methods: A retrospective analysis of prospectively collected data of patients who underwent laparoscopic gastric bypass surgery for morbid obesity between January 2008 - December 2010 in the Whittington Hospital. There were no exclusion criteria.

Results: From our database, 211 gastric bypasses were performed during the above period. There were 21 male and 190 female patients (ratio 1:9). The average weight loss was 70.4% EBW (range 30.34-119.2). 47 patients (22.27%) experienced weight loss >80%. 36 patients (17.1%) achieved 80 - 100% EBW loss and a further 11 patients (5.21%) achieved >100% EBW loss. All patients with more than 100% EBW loss at 24 months were female. The

commonest association was a diagnosis of marginal ulcers present in 4 patients (36.4%) of the >100% EBW loss group compared with 6 patients (16.7%) of the 80–100% EBW loss group and 2 patients (1.2%) of <80% EBW loss group.

Conclusion: Marginal ulcers should be suspected in all patients with >80% EBW loss following gastric bypass surgery. Alternately, marginal ulcer diagnosis in symptomatic patients should alert us for a high risk for more than EBW loss. They may benefit from aggressive treatment of ulcer.

P.416 Post Bariatric Care Protocol Avoiding Nutrient Deficiencies

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Introduction: Rapid acceptance of bariatric surgery has resulted in heightened fears of long term deficiencies & impact on health. It is essential that deficiencies are avoided by implementing a protocol, which is easier to follow esp for patients travelling from long distances. Many centers advise periodic parenteral supplementation to avoid vitamin & mineral deficiencies.

Method: In a program doing ~250 bariatric procedures yearly, post-op patients are aggressively followed up with modified post-surgical protocol where patients are counselled in detail about the reasons for supplement intake & possible outcomes in situations of default. Bi-monthly support group meetings, electronic communications & 6 monthly reminders are incorporated in the program to ensure low rate of default. Parenteral supplements are avoided & simplified oral supplement details are provided.

Result: Though 70% patients present pre-op with nutritional deficiencies, only 3% are found to have post op deficiencies esp protein & vit D deficiencies. B₁₂ & Iron deficiencies are not seen after surgery though 30% of our patients undergo gastric bypass surgery.

Conclusion: Post bariatric deficiency related complications can be avoided by careful pre & post-surgical supplement protocol & regular follow up. Nutrition status improves in these patients post-operatively due to close supervision.

P.417 Nutrition Status After a Standard Gastric Bypass Procedure Up To 5 Years Later. Does Gastric Bypass Causes Malignant Deficiencies?

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Aim: To evaluate the prevalence of nutritional deficiencies and co-morbidities in patients undergone a standard gastric bypass procedure.

Methods: During 2006–2011, 114 patients were recruited to undergo a gastric bypass procedure. From them, 92 (80%) complied with follow up visits. Nutritional screening up to 4 years after surgery included, among others, blood testing for asymptomatic anemia, levels of B₁₂, folic acid, PTH, vitamin D and protein. All patients underwent the procedure after routinely correcting any preoperative deficiencies patients. The progression of pre-surgical diabetes mellitus was also evaluated.

Results: The mean age of participants was 53±4.7 years old and 81% were postmenopausal women. Initial BMI was 44.7±6.7 and mean BMI at least one year later was 28.6±6.3. 37 patients had diabetes mellitus and were under medication. Independently of nutritional supplementation, 32% of patients developed asymptomatic anemia, 16% of patients developed Vitamin D deficiency and 9% of patients presented increased PTH. Deficiency in B₁₂ and folic acid levels developed in 9 patients (13%) not taking nutritional supplementation. Protein levels remained normal in all patients. Most patients (74%) did not undertake the appropriate visits to the dietitian, whereas 32% of patients declared that they have moderately improved their dietary habits. At least one year after surgery diabetes mellitus resolved and most ex-diabetic patients (21) needed no medication.

Conclusion: Gastric bypass can cause only mild anemia in Greek postmenopausal women, to a lesser extend Ca dys-homeostasis and does not cause protein deficiencies. Cobalamin and folic acid levels appear highly dependent of nutritional supplementation compliance. Diabetes mellitus resolves in most postmenopausal women. Although these deficiencies are placed directly under control, preventive nutritional supplementation prior to and after surgery should be emphasized. Further, better compliance with dietary advice and follow up visits may improve the aforementioned outcomes.

P.418 Pre Operation and Post Operation Nutrition for Bariatric Surgery Patients

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Obesity is epidemic, it continues its popularity among bariatric surgery which rises for both severely obese adults and adolescents and very recently among children's. Medical practitioners must be aware of pre-existing nutritional deficiencies in overweight and obese patients and appropriately recognize the immediate need of special nutritional team in order to treat both common and rare nutritional deficiencies that may arise or worsen following bariatric surgery. We will discuss the recent new era of general view of nutritional deficits and Physical activities in obese and overweight individuals and those that commonly present before and mainly after bariatric surgery.

The recent studies indicate that many post-bariatric surgery patients have protein-calorie malnutrition and various vitamins and mineral deficiencies that may limit optimal health and healing.

Pre posterior bariatric surgery is important but not as much as post.

The treatment of post-bariatric surgery patients is essential, the awareness and the education of the nutritional deficiencies like; Proteins, Vitamin C, A, glutamine, etc. can be maximized by adhering to eating guidelines, supplemental prescriptions and related physical activities significant beneficial effects on wound healing and optimizing the immune system.

Obesity is a very morbid condition that has several health consequences. Mild obesity is still controllable by a special protocol based on nutrition and physical activities. However, as it is advanced level it becomes more difficult to treat because of metabolic changes, physical limitations, psychological effects, and social inhibition.

When exercise and dieting does not help to control the weight bariatric surgery is the solution, to bring the person back to normal near to desirable weight.

Pre posterior at this stage is very important to prepare and educate the patient to the changes which will be visible during post posterior. Where at the end stage the person should start to work for maintaining his weight.

The biggest success of achieving the desirable weight and almost without and health symptoms and improvements to all health complications, The Medical Community can no longer ignore the vast body of EVIDENCE BASED MEDICINE RESEARCH(EBMR) that proves that Exercise and Sports Nutrition Prescriptions, and non-invasive Lifestyle Management and Age Management Protocols are the most effective treatments for the care and prevention for virtually all chronic diseases, disabilities and dysfunctions. DOCTORS FITNESS CENTERS (DFC) AND THE FELLOWSHIP IN INTEGRATED SPORTS MEDICINE (FIISM) PROVIDE A SOLID AND CONCISE FRAMEWORK for all doctors to seamlessly integrate DFC/FIISM Protocols into the doctors existing medical practice, regardless of the doctors specialty.

The basic, major and efficient post- posterior of Bariatric surgery lies on the wellness team department.. Besides the pre posterior

Weight lose cannot be achieved without successful team of post posterior.

EBMR reported in "CIRCULATION" the Journal for Cardiologists that the number one predictor of the patients' chance of dying from a Cardiac Event had little to do with cholesterol, triglycerides, HDL, LDL, HDL-C or any other blood panel or medical test! EBMR showed that the number one test for determining the patients' longevity was their time in the ONE-MILE(1.6Km) WALK-JOG-RUN TEST! DFC/FIISM has specific Treatments and Protocols to improve nearly ALL your patients' times in this test, safely and effectively without the devastating side-effects of the current drug Protocols for Cardiac Patients.

P.419 Vitamin D Deficiency in the Obese Population - The Indian Paradox**PRESENTER: C. Remedios¹**¹Centre for Obesity & Diabetes Surgery, Nutrition, Mumbai -India

Aim: Vitamin D 3 deficiency has been linked to obesity and development of Type 2 diabetes. The aim of this study was to 1) evaluate the prevalence of vitamin D3 deficiency in the Indian obese population 2) determine if a correlation exists between vitamin D3 deficiency, body mass index, waist circumference 3) to determine whether vitamin D3 deficiency is an independent risk factor for type 2 diabetes in a purely obese Indian population

Methods: This was a retrospective observational study. 757 obese patients were included. Anthropometric parameters were recorded. Prevalence of type 2 diabetes mellitus (T2DM), fasting and post prandial sugars, fasting and post prandial insulin and HbA1c were recorded. Vitamin D3 levels were measured in all patients. Vitamin D3 deficiency was defined as serum 25 OH D levels less than 10 ng/ml. The population studied had a median Body Mass Index (BMI) of 41.41 kg/m² (range 28.1 -93.42 kg/m²) and a median age of 41 years (range 18 to 79 years). The median Waist Circumference (WC) was 125 cms (range 93 cms – 212 cms).

Results: Overall prevalence of vitamin D3 deficiency was 41%. There is a positive co-relation between increasing BMI and Vitamin D3 deficiency. The incidence of vitamin D3 deficiency in males was comparable.

Conclusion: The Indian obese population had a high prevalence of vitamin D3 deficiency. A positive co-relation between increasing BMI and vitamin D3 deficiency. No co-relation was found between vitamin D3 deficiency and waist circumference. Vitamin D3 deficiency was not found to be an independent risk factor for type 2 diabetes in this obese Indian population.

P.420 Do Patients with Depression Have Worse Outcomes Post LRYGB??**PRESENTER: A. Hannan¹**Co-authors: D. Nadim¹, S. Afghan¹, A. Alhamdani², P. Sufi², M. Howlader²¹UCL, UCL, London-United Kingdom²Whittington Hospital, General Surgery, London-United Kingdom

Introduction: There has been much speculation about the preoperative mental state affecting success of the LRYGB. Depression in particular was being seen as a contributory factor to this success.

Objective: The aim of this study is to investigate whether patients with pre-operative depression are more likely to develop less successful outcomes following LRYGB compared to patients with no psychiatric history (NPP).

Method: Clinical data of 368 patients undergoing LRYGB between 2007 and 2012 were analyzed from a prospectively collected database. Based on our exclusion criteria, 49 patients with depression and 55 patients with no psychiatric problems were evaluated post operatively at 1, 2, 3 and 4 years. Percentage excess body weight loss (EBWL) was calculated and co-morbidities assessed.

Results: Between the depression and NPP cohort groups there was no significant difference in % EBWL and resolution of co-morbidities at 1, 2, 3 and 4 years. However, a trend was seen at 4 years showing depression cohort achieving less %EBWL in comparison to NPP. In addition, a trend also shows NPP to report higher rate of remission in all co morbidities post-surgery. Furthermore, the depression cohort was more likely to report no change or worsening of co morbidities. DNA rates were similar in both groups.

Conclusion: Our results show no difference in co-morbidity resolution and the %EBWL between the depression and NPP cohort groups at 1, 2, 3 and 4 years. However a trend demonstrates higher rate of co-morbidity remission and %EBWL in the NPP group.

P.421 The Quality of Life of Older Bariatric Patients Before and After Surgery**PRESENTER: P. Toor¹**Co-authors: K. Castleberry¹, K. Kim¹, C. Buffington¹¹Florida Hospital Celebration Place, Metabolic Medicine and Surgery Institute, Celebration-United States

Introduction: Increasing age, independent of body size, has a negative effect on many aspects of life quality. The purpose of this study was to examine the effects of age on quality of life of morbidly obese patients before and after bariatric surgery.

Methods: Participants included 104 bariatric surgical candidates whose quality of life was assessed before and one year after surgery using the Impact of Weight on Quality of Life Questionnaire (IWQOL). Associations between age and IWQOL were studied for all participants and for individuals in the upper and lower quartiles of age, i.e. patients >60 and <37 years.

Results: IWQOL for all participants was impaired (p<0.01) with increasing age for health, mobility, sex, and eating; and, these same variables were significantly lower (p<0.01) for patients > 65 years as compared to their younger cohort. Age was not associated with work, self-esteem, activities of daily living and was positively correlated (p=0.004) to social/interpersonal relations. Bariatric surgery led to a 28% total reduction in BMI with no significant differences in weight loss between the older and younger subsets (% change BMI=24.1±2.6 and 27.9±2.2, respectively). Surgery resulted in highly significant improvement in all of the IWQOL subscales, and such improvements were similar between patients in the upper vs. lower quartiles of age. Increasing age remained an inverse correlate (r=0.31, p=0.01) of IWQOL mobility but no longer had a negative influence on any of the other IWQOL domains.

Conclusion: Surgery leads to highly significant improvement in IWQOL for all patients, regardless of age.

P.422 Efficacy of LSG in Morbidly Obese with Type 2 Diabetes Mellitus in UAE, Sharjah Experience**PRESENTER: T. Mahdi¹**Co-author: A. Alwahedi¹¹AlQassimi Hospital, Surgery, Sharjah-United Arab Emirates

Background: Many reports have showed that patients who have undergone laparoscopic sleeve gastrectomy (LSG) have experienced resolution of type 2 diabetes. The UAE ranks as the fifth fattest nation in the world, and the diabetes rate of roughly 20 percent for residents and 25 percent for Emirati nationals. The aim of our study was to evaluate the efficacy and safety of LSG in morbidly obese UAE subjects with type 2 diabetes mellitus.

Methods: From March 2008 to January 2012, morbid obese patients with T2DM underwent LSG enrolled in this study. The change in fasting blood sugar, postprandial blood sugar, and glycosylated hemoglobin, C-peptide, total body weight and the use of oral hypoglycemic agents and insulin at the end of one year were studied.

Results: A total of 167 patients with type 2 diabetes mellitus (101 women and 66 men age 39.5 ± 8.7 years, body mass index 47.7 ± 6.6 kg/m², and hemoglobin A1c 8.7% ± 1.9%) had undergone LSG. Before LSG, 120 patients (71.9%) required oral hypoglycemic agents and 47 patients (28.1%) required oral hypoglycemic agents and insulin).

Resolution of type 2 diabetes was achieved in 108 (64.7%), remission in 50 (29.9) and stable in 9 (5.4) patients at one year after LSG. The diabetes resolution rates for those with pre-operative C-peptide <3, 3–6, and >6 ng/mL were 5/43 (11.6%), 83/104 (79.8%), and 20/20 (100%), respectively.

Conclusion: LSG is an effective treatment of T2DM in morbidly obese UAE patients. C-peptide is the predictor of successful T2DM resolution should be evaluated and used as patient selection criteria. The possible mechanisms explaining improvement in glycemic control need further investigation.

P.423 Sleeve Gastrectomy in Patients with Diabetes Mellitus Type 2. A Case Series of 75 Patients

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Introduction: Type 2 diabetes mellitus (T2DM) and obesity are often associated in the same metabolic pathology and represent a significant public health problem. Although laparoscopic sleeve gastrectomy (LSG) is a relatively recent technique of bariatric surgery several studies have highlighted the effects in terms of resolution and improvement of diabetes.

Objective: The aim of this study was to evaluate the effects of laparoscopic sleeve gastrectomy (LSG) on type 2 diabetes mellitus (T2DM) in obese patients at one year of follow up.

Methods: Prospective case series of 75 diabetes mellitus patients who went to LSG between December 2009 to December 2012. There were 75 patients. Male: 19 patients, Female: 56 patients. 51 patients with 1 oral drug, 19 patients with combinations of oral drugs and 5 patients with insulin requirement. Mean Age 47 (range 30 to 75) years. Mean Preoperative Weight: 98.3±15 (65–210) kg. Mean preoperative BMI of 42.1±7 kg/m², mean fasting plasma glucose (FPG) of 160.2±26.9 mg/dL, mean glycosylated hemoglobin (HbA(1c)) of 8.1%±1.4%, and a mean T2DM duration of 5 years. All patients had a 24 month follow-up.

Results: 57 patients (76%) discontinued antidiabetic medications 6 months after LSG (%EBMIL mean was 70.1 ± 24.2 (range 26.1 to 134.4)%). HbA(1c) of 5.5%±.2%. 19 (25.3%) patients reduced or change to orally medication. 1 (1,3%) patient continued with insulin.

Conclusions: LSG is a safe and effective treatment for obesity. This study confirms the efficacy of LSG in the treatment of T2DM and indicates that LSG can provide a significant percentage of treated patients with one year of remission of T2DM.

P.424 Reduction in the Risk of Coronary Heart Disease and Stroke in Patients with Type 2 Diabetes Mellitus and a Body Mass Index Between 25 And 35 Kg/M2 After Gastric Bypass

PRESENTER: J. Molina¹

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Introduction: Type 2 Diabetes Mellitus is a major risk factor for cardiovascular events. Bariatric Surgery has shown to improve glycemic control in diabetic patients and plays an important role in controlling other cardiovascular risk factors, such as weight, cholesterol, hypertension, etc.

Objective: Evaluate the effect of gastric bypass in patients with T2DM and a BMI between 25 and 35 kg/m² in the risk of fatal and non-fatal coronary heart disease and stroke.

Material and Methods: Patients with a BMI between 25 and 35 and with T2DM were submitted to gastric bypass. Weight, Total and HDL Cholesterol, Systolic blood pressure and HbA1C were registered in the preoperative evaluation and after 2 years of follow up. Risk of Coronary heart disease (fatal and non-fatal) and stroke (fatal and non-fatal) were calculated using the UKPDS Risk Engine before surgery and after the follow up and were compared.

Results: 29 Patients were included, 14 males and 15 females, with a mean preoperative BMI of 31,1 ± 1,9 and 24,1 ± 2,9 after the follow up. The 10 years risk for Coronary heart disease, Fatal Coronary heart disease, Stroke and Fatal Stroke calculated before the surgery was 15%, 9,1%, 4,4% and 0,7%; and 2 years after surgery was 9,3%, 5%, 4,3% and 0,6% respectively, showing a reduction in the Relative Risk of 38,3%, 44,5%, 1,6% and 14,1%.

Conclusion: Gastric Bypass seems to decrease the risk of cardiovascular events according to the UKPDS Risk Engine.

P.425 “Double Stent Technique” Following Sleeve Gastrectomy Leak- An Initial Experience

PRESENTER: O. Khan¹

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Background: Endoscopic stenting is a novel technique for the treatment of leaks following sleeve gastrectomy. Insertion of fully covered stents is associated with a significant incidence of migration and as a consequence of this some clinicians advocate insertion of a partly covered stent. These stent, while not prone to migration, may consequently be associated with difficulties with respect to stent removal. We described a technique of safe removal of a partially covered stent using a “double stent” technique.

Results: Over a 26 month period a total of 5 patients had leaks following sleeve gastrectomy. In all cases a partially covered stent was inserted. Four weeks later endoscopic stent removal was attempted however in all cases this was not easily achievable. A fully covered stent was therefore inserted and two weeks later both stents were removed.

Stent removal was associated with minor bleeding in one case and a median hospital stay of one day.

Conclusions: “Double stent technique” is a useful approach to allow the safe removal of partially-covered stents following sleeve gastrectomy leak.

P.426 Standardized Surgical Technique Improves Surgical Outcome of Laparoscopic Adjustable Gastric Banded Plication

PRESENTER: K. Malapan¹

Co-authors: A. Ghinagow¹, A. Ooi Se¹, P. Chang¹, C. Huang¹

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Introduction: Laparoscopic adjustable gastric banded plication (LAGBP), which combines adjustable gastric banding and plication, has been adopted by some bariatric surgeons to treat morbid obesity. However, non-standardized surgical steps provoked un-expected complications. Here, we postulate standardized surgical techniques, to improve the postoperative recovery and decrease potential complications.

Methods: We conducted a prospective study for LAGBP, including preserving right gastroepiploic vessels and uniform plication volume. From July 2011 to March 2013, totally 51 patients were enrolled. Relevant preoperative and postoperative data were collected and analyzed.

Results: 19 male and 33 female patients with mean age 32.3 years old (19–49) were enrolled. Pre-op mean BMI was 39.4 (32.0-52.4) in average. All the surgeries are successfully performed laparoscopically with mean operation time 105.8 mins. Post-op hospitalization was 2.1 days (1–3). No intra-operative complications or surgical mortality was observed in this study. No major surgical complication (0%) was observed, but only 2 patients were readmitted for dehydration and medical treatment offered.

Conclusion: Standardized technique of LAGBP further ensures the feasibility, safety and reproducibility of this new bariatric surgery. Otherwise, long-term results needed to be reported in the future.

P.427 Diabetes Without Drug Therapy After Biliopancreatic Diversion with Duodenal Switch: A Reality for Most on Intermediate-term Follow-up

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Background: The potent effect of BPD-DS in inducing diabetes remission based on drug utilization data and biochemical markers of

diabetes control on intermediate-term follow-up (up to 5 years) is described.

Methods: A retrospective review of severely obese patients with type 2 diabetes mellitus (T2DM) who underwent BPD-DS between 2006 and 2009 was performed. Patients were included if they had baseline HbA_{1c} and/or fasting glucose levels plus complete information in their medical record relating to diabetes drug therapy and follow-up at five distinct time points: first evaluation, pre-op visit, surgical admission, discharge, and last follow-up visit. Continuous data is expressed as mean±sd.

Results: 299 T2DM patients (178 F: 121 M) were reviewed. 99 patients were on Insulin on admission. Age, weight, and BMI at time of surgery were 46.8±8.9 yrs, 142.8±28.7 Kg, and 51.6±8.3 Kg/m², respectively. Follow-up time was 33±14 months (Range: 3 to 63 months), with >67% having >2yr follow-up. Weight on last follow-up was 86.0±17.3 Kg. Elevated baseline fasting glucose and HbA_{1c} (despite medical therapy) normalized as early as 3 months post-operatively and remained so on last follow-up. In the Insulin treated group, 89% were off insulin on last follow-up, and oral hypoglycemic agent use dropped to 9% (82% at surgery). Just 3% of those on oral hypoglycemic agents only at the time of surgery remained on these agents.

Conclusion: BPD-DS induces durable diabetes remission in obese patients based on biochemical markers of diabetes control, with most patients being off drug therapy up to 5 years postoperatively.

P.428 Ventral Hernia Repair During Bariatric Surgery Procedure

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Introduction: The incidence of ventral hernia in morbidly obese patients is high and the repair of hernia in the same sitting with bariatric surgery procedure still controversial. In this study we presented our experience in managing ventral hernia in the same session of bariatric surgery.

Method: A retrospective study collecting data from database system in KFMMC and procure hospital from the patient's files in a period from 2008–2013. Who had laparoscopic Roux en Y gastric bypass/sleeve gastrectomy associated with ventral hernia repair done by Dr. Garzaie.

Result: A total of 13 patients underwent bariatric surgery procedure with ventral hernia repair with BMI ranging from 38–48%, 8 patients (61.5%) underwent laparoscopic Roux en Y gastric bypass, 5 patients (38.5%) underwent Laparoscopic sleeve gastrectomy (one of them was SILS). 5 patients (38.5%) had incisional hernia & 8 patients (61.5%) had PUH. The repair was with mesh in 7 patients (53.8%); 5 of the mesh repair (71.4%) done laparoscopically & 2 (28.5%) open. However 6 hernias (46%) repaired anatomically. Two of them (33.3%) by endoclose & 4 cases (66.6%) by open technique. The average hospital stay was 5 days. Follow Up ranging from 2 weeks- 2 years with average one year. In follow up period two patients (15.4%) with open mesh repair developed wound infection one of them with mild leak, & 2 patients (25%) had recurrence of ventral hernia.

Conclusion: Repair of ventral hernia in the same session of bariatric surgery appears safe and feasible with low complication rate. However, more cases should be studied to weigh the risk of complications and the optimal timing and management of the hernia repair.

P.429 Air Filled Intra-gastric Balloon (HelioGast) as Preoperative Treatment in Suberobese Patients

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Introduction: Superobese patients (BMI>50) have a higher intra- and post-operative complications rate, increasing proportionally to the BMI. The

preoperative reduction of weight allows therefore to reduce the risk in addition to improving the performance of the patient in terms of postoperative recovery.

Materials and methods: Were selected 85 patients with BMI greater than 50, which was placed intragastric balloon inflated with air, held in place for six months and subjected to diet with clinical examination monthly. E was estimated initial body mass index, the trend in monthly checks in weight and BMI end. 83/85 (97.6%) patients were then tested within 60 days after removal of the balloon, surgery (BPG or SG).

Results: In all patients there was a reduction in weight and body mass index, the average weight loss was 27kg (3–68), the mean reduction in BMI was 9.7 (0–21). Patient compliance to the periodic inspections was excellent (85% of pts. Has performed all monthly). In no case was it necessary to precede removal of the garrison for early symptoms or adverse events.

Conclusions: The use of intragastric balloon HELIOGAST has proved particularly effective in terms of weight loss and thus a reduction of the risk and tolerability for the patient.

P.430 Concomitant Laparoscopic Ventral Hernia Mesh Repair and Bariatric Surgery

PRESENTER: A. Vashistha¹

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Introduction: To analyze the safety in combining laparoscopic ventral hernia repair with a mesh and bariatric surgery. Obesity is one of the important precipitating factors for primary and recurrent ventral hernias (incisional and umbilical) and it is not uncommon to find these hernias in patients opting for obesity surgery. But, with no consensus or recommendation and concern of mesh infection, surgeons fear in combining these procedures, especially Roux en Y gastric bypass and sleeve gastrectomy.

Method: In this study, we have retrospectively analyzed all patients who underwent concomitant bariatric procedure and mesh repair for ventral hernia at our department. A video presentation will follow to illustrate the use of Biological Meshes.

Results: A total of 15 out of 182 patients operated at our department between 2007 and 2012 had concomitant procedures. Seven patients had Roux en Y gastric bypass and remaining eight had sleeve gastrectomy performed on them. No immediate complications or any incidence of mesh infection or recurrence in either of the groups.

Conclusion: Concomitant mesh repair for ventral hernias can be safely combined with bariatric procedures like Roux en Y gastric bypass and sleeve gastrectomy. But, for beginners, these should be done only in selected cases after fully informed consent from the patients.

P.431 Diabetic Remission After Loop Duodeno Jejunostomy with Sleeve Gastrectomy (LDJB-SG) for Low BMI (<32 kg/m²) Type II Diabetes Mellitus

PRESENTER: C. Huang¹

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Introduction: Surgical treatment of Type 2 Diabetes Mellitus (T2DM) has been increasingly documented. We developed a new procedure, Loop duodeno-jejunal bypass with Sleeve gastrectomy (LDJB-SG) / Proximal Duodenal Switch (PDS), combining sleeve gastrectomy, duodenal exclusion and bypassing proximal jejunum. Here we reported glycemic results of this procedure.

Methods: From October 2011 till March 2012, 57 T2DM patients (24 men and 33 women), underwent PDS. Data on patient demographics, BMI, co-morbidities, and details of diabetes mellitus, including disease duration, family history, medication use, and surgical results, were prospectively collected and analyzed.

Results: Mean age and BMI were 49.7 years (33–64) and 27.5 kg/m² (22.4–31.9), and mean duration of T2DM was 7.6 years (range, 6months–20 years). 8 patients needed insulin therapy and others were controlled by oral hypoglycemic medicine. Pre-operative mean fasting plasma glucose and glycated hemoglobin were 164.9 mg/dL (61.3) and 8.96 % (1.8), respectively. Operative time and hospitalization were 122.4 mins and 3.4 days in average. There was no

mortality, but 3 patients (5.2%) required reoperation because of leakage or stricture of gastric tube. At 6th and 12th month, mean fasting plasma glucose and glycated hemoglobin significantly dropped to 116.6 mg/dL (61.4) and 104.2 mg/dL (20.0) & 6.36% (1.1) and 6.46% (0.9). 18 patients achieved 1 year follow up and 10 patient (55.5%) patients showed T2DM remission (HbA1C<6.0%) and 15 (83.3%) patients achieved HbA1C<7.0% without medicine.

Conclusion: LDJB-SG has shown this novel procedure is feasible, safe, and excellent glycaemia control, and should be treated as a new option in metabolic surgery

P.432 Intra-Gastric Pressure Measurement During Laparoscopic Sleeve Gastrectomy to Prevent Early Leaks

PRESENTER: P. Vasas¹

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Introduction: One of the most significant complications of laparoscopic sleeve gastrectomy (LSG) is the stapler-line leak. The reported complication rate is typically around 2%. This has significant implication in postoperative readmissions, hospital stay, deaths and attributed high financial cost. One third of these leaks are "early, occurring in the postoperative 48 hours, and this condition necessitates return to the operating theatre and direct closure of the defect. Our hypothesis is that the universally employed methylene-blue test does not exclude the presence of early leaks, as the achieved intragastric pressure is unclear during the test.

Method: Prospective, case-controlled study was designed and carried out between Oct 2012 and Feb 2013. All consecutive patients were involved who underwent LSG. Intraoperative intragastric pressure measurement (IPM) was carried out while the methylene-blue leak test was performed and we aimed to reach the 60 cmH₂O pressure during the test. Patient with same gender and BMI was chosen to populate a comparative group in 1:2 ratios.

Results: 25 patients underwent LSG during the study period, 18 females. IPM was measured in 8 patients.

Mean preop BMI was 48.4 (range 33.8-64); this did not differ significantly from the control group, whose mean BMI was 51.16 (range: 37.9- 62.6). There was no leak in the IPM group, while 1 patient had an early leak in the control group, which lead to readmission to the local hospital.

Conclusion: IPM is an easy method to perform and seems to improve the detection and the prevention of the early leaks.

P.433 The Diagnostic Value of Predictive Tests on for Determination of Difficult Laryngoscopy and Intubation in Obese Patients

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Introduction: Difficulties with laryngoscopy and intubation (LI) significantly contribute to the morbidity and mortality associated with anesthesia. Many predictive tests are used in the determination of difficult laryngoscopy and tracheal intubation. Several reviews have reported that LI is more difficult in obese than in lean patients. The aim of this study was to assess the clinical usefulness of frequently used predictive tests in the obese.

Method: 128 morbid obese (BMI 30) patients who went under general anesthesia were included in the study. The predictive tests for determination of difficult laryngoscopy and tracheal intubation which are sterno-mental distance (SMD), thyro-mental distance (TMD), and inter-incisor distance (IID), the upper lip bite test (ULBT), Wilson total risk score (WTRS), neck circumference (NC) were measured preoperatively. After induction of general anesthesia, view determined using the Cormack-Lehane (C-L) grading system by anesthesiology specialist. C-L Grades 1 and 2 were categorized as "easy intubations" and Grades 3 and 4 as "difficult intubations". By using receiver operating characteristic analysis, the best

cutoff points of the tests were calculated. Finally, sensitivity, specificity, positive and negative predictive values of these tests were calculated

Results: The incidence of and difficult LI in obese was 4,7% (n=6). Class II ULBT, TMD 8.5cm, SMD 12.5cm, NC 38, 5cm, IID 4cm, WTRS 2cm were defined as predictors of difficult intubation. ROC analysis, sensitivity, specificity, positive and negative predictive values of the predictive tests were ULBT (0,590; %50; %68,9; %7,3; %96,6), TMD (0,541; %66,7; %57,4; %7,1; %97,2), SMD (0,625; %83,33; %48,36; %7,4; %98,3), NC (0,337; %50; %89,3; %18,8; %97,3), IID (0,590; %40,00; %75,72; %8,7; %95,6), WTRS (0,435; %80,00; %5,20; %4,7; %81,8).

Conclusions: UIDT predicts difficult LI better than SMD and TMD in general population. In our study, SMD predicted better than UDIT in obese patients. For prediction of difficult LI in obese patients SMD is the test of choice, and UDIT, TMD, IID can be used as supporting tests.

P.434 Increased Insulin Clearance and Normalization of C-peptide Secretion in Diabetic Patients After Roux En Y Gastric Bypass

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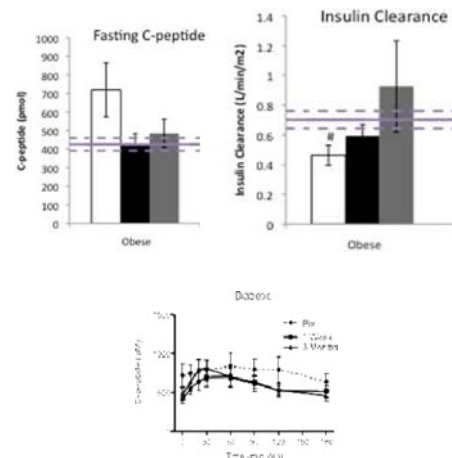
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Introduction: We previously reported that Roux En Y gastric bypass normalized fasting insulin and insulin response to a mixed meal in diabetic patients. In this study we investigated whether this was a result of changes in insulin secretion and/or insulin clearance.

Methods: In nine obese-diabetic patients a standardized liquid meal was given after an overnight fast. Blood samples were drawn at several intervals relative to the start of the meal. C-peptide and insulin were measured. AUC for insulin secretion (in pmol/min/m²) divided by the AUC of plasma insulin (in pmol/L) was used to determine insulin clearance. Incremental area under the curve (AUC) was calculated using the pre-meal values as baseline. The subjects were tested again at 1 week and 3 months post-surgery.

Results: Compared to 1 week and 3 months post-surgery, pre-surgery fasting c-peptide was higher (P < 0.05) in the diabetic group. C-peptide area under the curve after surgery was unchanged in the patients with type 2 diabetes. In the type 2 diabetic patients, insulin clearance doubled from pre-surgery to 3 months post-surgery (0.46 ± 0.07 L/min/m² pre-surgery vs. 0.93 ± 0.31 L/min/m² 3 months post-surgery).



Conclusions: Fasting insulin and insulin response to a meal are normalized in diabetic patients through changes in both insulin secretion and insulin clearance.

P.435 Effect of Varying BP Limb Length on Type 2 Diabetes Resolution After RYGB - A Pilot Study

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Background: The mechanism of improved glycaemic control after Roux-en-Y gastric bypass (RYGB) is still not clearly understood. This pilot study investigated the effect of variation in the length of the biliopancreatic (BP) limb on diabetes remission one year after laparoscopic RYGB.

Methods: Cohort of 50 diabetics undergoing LRYGB. Prospective non-randomised comparison of the effect of 40cm and 75cm BP limb on the following end-points: % EWL at 6 and 12 months; cessation of all diabetes medication and HbA1c at 12 months. A sub-group analysis was undertaken in those patients with pre-operative and one year post-operative HbA1c levels.

Results:

SUB-GROUP ANALYSIS	75cm BP limb n=15	40cm BP limb n=14	p value
Pre-op weight mean [SD]	124.5kg [12]	139kg [23]	0.04
Pre-op BMI (mean)	46	47	
Male : Female	1:14	7:7	0.01
Age in years (mean)	48	51	
Pre-op Insulin	3/15	2/14	
Duration T2DM (months)	71	87	0.67
No diabetes Rx at 1 year	11/15 (73%)	13/14 (93%)	0.33
% EWL at 6 months	56%	57%	
% EWL at 12 months	68%	71%	
Pre-op HbA1c	7.85	7.48	0.48
HbA1c at 1 year (mean)	6.37	5.99	0.44
Change in HbA1c 75cm BP limb	1.48	-	<0.0001
Change in HbA1c 40cm BP limb	-	1.49	0.0004
ALL PATIENTS	75cm BP limb (n=26)	40cm BP limb (n=24)	p value
Pre-op weight (mean)	125.4 kg	135.7 kg	0.07
Pre-op BMI (mean)	45.8	48.2	
Male : Female	6:19	9:15	0.35
Age in years (mean)	51	51	
Pre-op Insulin	8/26	5/24	0.52
Duration of Type 2 DM (months) [SD]	84 [69]	103 [135]	0.52
No diabetes Rx at 1 year	20/26 [77%]	23/24 [96%]	0.1
% EWL at 6 months	54%	55%	
% EWL at 12 months	67%	72%	

Conclusion: There is no strong evidence that varying the BP length between 40 and 75cm has a significant effect. However, 20% more people did stop taking all diabetic medication with the shorter BP length (achieving a “remission” rate similar to the duodenal switch). This is a pilot study and is limited by the small number of patients, but a larger analysis in the context of a randomized controlled trial with standardised alimentary limb lengths may be justified.

P.436 Preoperative Carbohydrate Intake is coupled to Increased Nausea After Gastric Bypass

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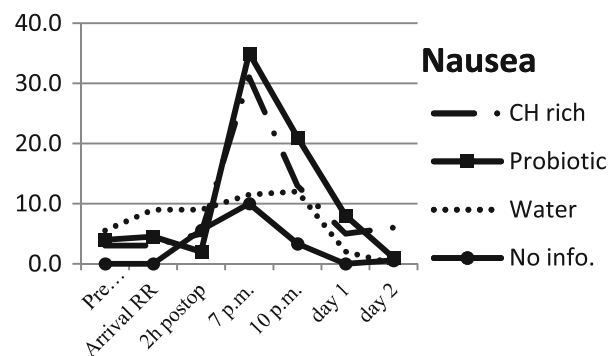
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Introduction: Low-caloric diets are prescribed prior to GBP. Preoperative fluid treatments with carbohydrates (CH) are used in surgery to optimize postoperative well-being. We investigated whether benefits were evident short-term after laparoscopic gastric bypass surgery (LGBP).

Patients and Methods: Forty elective LGBP patients were randomly allocated to either of four arms. Diabetics were excluded. Information on risk factors for postoperative nausea was collected. In three arms patients were instructed what to drink, in excess of their LCD diet, 16 and 2 hours before operation. Arms were: i/ 500 + 250 ml of a liquid rich in carbohydrates (total CH= 94 g), ii/ 500+250 ml of a probiotic (total CH= 83 g) iii/ drink > 2000 ml of tap water, and iv/ no instructions. All patients were operated between 8.30 and 10.30. Data were acquired from baseline, arrival to the recovery room (RR), and at five more time points. We measured pain, nausea and fatigue on 100 mm VAS.

Results: There were no differences between groups for age, gender, BMI or nausea risk factors. Pain and fatigue both reached their peak values on arrival to the RR after which point values gradually decreased. For these variables there were no differences between groups. Nausea peaked later, at 7 p.m. Women overall scored higher (p=0.0419). Patients with preoperative CH intake had significantly higher nausea scores than controls (p=0.0204).



Comments: Preoperative carbohydrate ingestion seems to be coupled to an increase nausea score. Further studies on preoperative diets are indicated. Treatment recommendations have to be postponed.

P.437 Gastric Sleeve: Technique that Produces Metabolic Improvement

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Hypothesis: 1)Gastric sleeve produces improvement of Diabetes Mellitus type 2 (DM) and insulin resistance (IR) after one year postoperative. 2)Gastric sleeve is an effective technique for weight loss after one year postoperative. **Material and Methods:** Retrospective and observational study that included 57 morbidly obese patients submitted to GS. It was analyzed in the general population and DM2 insulinemy, glicemy HOMA index, glycosylated Hemoglobin (HbA1c) and weight, at the baseline and after one year postoperative. For DM2 condition, it was considered the improvement category, partial and complete remission.

Results: The average BMI was 46.84. Prevalence of DM type 2 and IR was of 25.5 % (n=14) and 38.2% respectively. HbA1c of 7 ± 0.99 baseline decreased to 5.8 ± 0.75 (p: 0.025) after one year postoperative for diabetic patients. Three (3) of these patients (25%) presented improved diabetes, two (2) (17%) partial remission and seven (7) (58.33%) complete remission.

During the preoperative period HOMA index in the general population was 2.91 ± 2.28 and 3.60 in diabetic patients. After one year postoperative it was observed a significant decrease in both groups 1.43 ± 0.90 (p: 0.001) for the general population and 1.42 ± 1.15 (p: 0.012) for diabetic patients.

The BMIELP was 71.85 ± 26.75 in the general population and 70.05 ± 25.25 in the diabetes group.

Conclusions: 100 % of the patients presented improvement or resolution of DM 2, and IR. GS in our series has shown an effective decrease of BMIELP.

P.438 Portal-Mesenteric Thrombosis Following Laparoscopic Sleeve Gastrectomy a Rare but Potentially Serious Complication

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) has shown to be an effective surgical technique for obesity control and its associated co-morbidities. As every surgical procedure it has complications risk with associated morbidity and mortality from 0% to 1% according to the series. Obese patients have a relative risk to develop Thromboembolic Diseases (TED) of 2.5 compared with non-obese patients. TED represents the main cause of mortality in bariatric surgery post-operative. In the different TED we found the Porto-Mesenteric Thrombosis (PMT). In bariatric Surgery it has an incidence of 0.5 - 3% and a global mortality of 0.21%. Incidence of PMT in relation to LSG reaches a 1%.The objective of this study is to evaluate the incidence of PMT in a LSG series of patients and analyze patient characteristics, risk factors, thrombosis extension and sequels.

Methods: Descriptive & retrospective study based on the analysis of a data base of consecutively LSG operated patients, by the same surgical team between April 2006 and August 2012.

Results: Out of 1170 LSG, 4 patients developed PMT, Incidence 0.34%. Female / Male:2 / 2, Mean Age 32 years old (22–38), Initial Weight 100.8 kg (87–126), Initial BMI 36 (32–42).: 2, 1, 3, 1, OR Time:91 min (80–95), Conversions 0, DVT Prophylaxis all with enoxaparin 40 mg sc/day, Mean Hospital stay 3 days.

Risk Factors

Contraceptive users	2
Reinitiated (CC)previous to PMT	1
Smoke	3
DVT Family History	1

Post op presentation day: Mean 15 (10–59), Re-admission mean stay 7.5 days (6–30).

Symptoms

Abdominal pain	4
Epigastric	3
Back pain	1
Vomits	1

Abdomen-pelvis CT Scan / Angio CT findings

PV Exclusive	1
PV extended to SpV	2
PV extended to SpV + SMV	1
Other findings: Small Bowel ischemia	1



Treatment: NPO, Anticoagulant (heparin and/or enoxaparin): Success 3, Fail 1 (PVT extended to SMV patient and intestinal ischemia & Intestinal necrosis), Surgery: small bowel resection.

Follow Up: 12 months (3–24), all asymptomatic, AngioCT complete permeabilization in 4. Thrombophilia Study: Positive 2, Factor V Deficit 1, Factor VIII Excess 1, Negative 2.

Conclusion: PVT incidence in this series is low as described in reported literature. Thrombophilia was demonstrated in 2 of 4 patients. 2 out of 4 patients have at least one associated risk, independent of thrombophilia, obesity and abdominal surgery. The only patient that required surgery had small bowel ischemia and demonstrated thrombosis extension to the SMV. A high clinical index of suspicion and early workup are essential to have an early diagnosis and treatment, minimizing complications, sequelae and mortality. The effectivity of LSG is not affected in terms of weight loss in the short and medium terms.

P.439 Early Post-operative Complications: Incidence, Management and Impact on Length Of Hospital Stay. A Retrospective Comparison between Laparoscopic Gastric Bypass and Sleeve Gastrectomy

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Introduction: Laparoscopic Roux-en-Y gastric bypass (LRYGB) and laparoscopic sleeve gastrectomy (LSG) are currently the most common obesity surgeries. Their early complications require urgent management and may prolong hospital stay (HS).

Method: Patients who underwent LRYGB and LSG from January 2009 through August 2012 were included. Early post-operative complications that prolong HS (> 5 days) were retrospectively analyzed, highlighting their relative incidence, presentation, management and impact on length of HS.

Results: Early complications were encountered in 66 patients (4.9%) after 1345 LRYGB operations vs. 49 patients (7.14%) after 686 LSG operations. This difference is statistically significant. Male gender percentage and mean BMI were significantly higher in the complicated LSG group. Median length of HS was insignificantly longer after complicated LSG than after complicated LRYGB (11 vs. 10 days). Leakage and bleeding were the most common early complications after either procedure. Leakage rate was insignificantly higher after LSG (12 patients, 1.75%) than after LRYGB (22 patients, 1.63%). Bleeding rate was significantly higher after LSG (19 patients, 2.76%) than after LRYGB (10 patients, 0.7%). Laparoscopic control of bleeding was needed in 7 patients (70%) in the LRYGB group vs. 13 patients (68.4%) in the LSG group. Elevation of inflammatory markers was the most common presentation for early complications after either LSG (18 patients, 36.7%) or LRYGB (31 patients, 46.9%).

Conclusion: LSG is associated with more early complications with subsequent prolongation of HS compared with LRYGB. These complications, especially bleeding, may be attributed to higher BMI and predominance of males in complicated LSG group.

	LRYGB	LSG	P value
Number of operations performed	2009	353	2009 148
	2010	372	2010 207
	2011	333	2011 213
	31 August 2012	287	31 August 2012 118
	Total	1345	Total 686

Number of patients with a prolonged HS of more than 5 days due to early post-operative complications N (%)	2009	21/353 (5.95%)	2009	9/148 (6.08%)	0.039*
		2010	14/372 (3.76%)	2010	
	2011	17/333 (5.1%)	2011	20/213 (9.38%)	
	31 August 2012	14/287 (4.87%)	31 August 2012	8/118 (6.78%)	
	Total	66/1345 (4.9%)	Total	49/686 (7.14%)	
Patients with HS ranging from 7–10 days N (%)		28 (42.4%)		17(34.7%)	0.571
Patients with HS ranging from 10–30 days N (%)		33 (50%)		26 (53.1%)	
Patients with HS longer than 30 days N (%)		5 (7.6%)		6 (12.2%)	
Median length of HS in days for patients with a prolonged HS of more than 5 days (Min. – Max.)	10 (7 – 76)		11 (7 – 92)		0.287

p: p value for comparing between the two studied groups

*: Statistically significant at p 0.05

Table 1: Comparison between LRYGB and LSG in regard to the number of performed operations and the number of patients with a prolonged HS of more than 5 days due to early post-operative complications. Prolonged HS is further subdivided in 3 categories: 7–10 days, 10–30 days and more than 30 days. The median length of the HS for patients with a prolonged HS of more than 5 days is also presented.

	LRYGB (66) (100%)	LSG (49) (100%)
Male gender N (%) *	16 (24.2%)	23 (46.9%) *
Median age in years (Min. – Max.)	45 (28–60)	48 (24–60)
Mean BMI in Kg/m ² (± SD) *	46.8 ± 5.7	54.2 ± 8.3 *
Co-morbidities:		
– Type 2 diabetes	31 (46.9%)	20 (40.8%)
– Hypertension	27 (40.9%)	22 (44.8%)
– Hypertriglyceridemia	16 (24.2%)	13 (26.5%)
– Osteoarthritis	28 (42.4%)	24 (48.9%)
– Sleep apnea	15 (22.7%)	10 (20.4%)

*: Statistically significant at p 0.05

Values are expressed as number (%). SD: standard deviation

Table 2: Demographic data and incidence of associated co-morbidities in patients with a prolonged HS of more than the fifth post-operative day after either LRYGB or LSG.

P.440 Performance of the BARD Scoring System in Bariatric Surgery Patients with Nonalcoholic Fatty Liver Disease (NAFLD)

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Introduction: Nonalcoholic fatty liver disease (NAFLD) includes a wide spectrum of liver diseases, ranging from pure steatosis to nonalcoholic steatohepatitis (NASH), and eventually to liver cirrhosis with its complications. Identifying advanced fibrosis in patients is crucial to evaluating prognosis and possible therapeutic intervention. A simple and highly accurate scoring system called BARD, which identifies patients with NAFLD and without significant fibrosis, was introduced and validated in North America. The aim of this study is to compare its performance in a bariatric surgery patients cohort with NAFLD.

Method: A group of 447 bariatric surgery patients with NAFLD (TGP > 19 in women or > 30 in men plus presence of steatosis on ultrasound or during intraoperative evaluation) were included in this study. Fibrosis in liver biopsies was evaluated according to the Histological Scoring System for Nonalcoholic Fatty Liver Disease. The BARD scoring system was assessed according to Harrison et al.: BMI > or = 28 = 1 point, AST/ALT ratio (AAR) > or = 0.8 = 2 points, type 2 diabetes mellitus = 1 point. **Results:** DM and AAR over 0.8 showed, respectively, a moderate and strong association with fibrosis. A BARD score of 2–4 points was associated with F3 or F4 stages of fibrosis with an odds ratio of 15.43 (95% CI; 4.67 – 80.3) and negative predictive value of 96.3%.

Conclusion: Our results demonstrate that the BARD scoring system has value in the non-invasive diagnosis of advanced fibrosis in bariatric surgery patients with NAFLD. The vast majority of morbidly obese patients with NAFLD would avoid liver biopsy if BARD was broadly introduced into the bariatric surgery practice.

P.441 Quality of Life Relating to Eating Disorders Among Obese Women Accepted for Bariatric Surgery

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Introduction: The importance of depression and disordered eating behaviours for the outcome of bariatric surgery has previously been discussed. The quality of life (QOL) related to eating disorders (ED), ED behaviours, feelings and thoughts and psychological feelings of obese patients has not been considered in studies of patients undergoing bariatric surgery. The aim was to explore obese women's QOL related to ED behaviours, thoughts and feelings and psychological feelings (QOL ED) as compared to ED inpatients and normal controls.

Method: The QOL ED was examined in three groups of women: obese about to undergo laparoscopic sleeve gastrectomy (LSG) (N=164), ED inpatients (N=208) and controls (N=510).

Results: Approximately one-third (28%) of the obese women had an ED, predominantly binge ED (BED). Obese women had significantly greater concerns about overeating and body image than controls but did not differ from ED women. Obese women had more ED thoughts and psychological feelings (depression, anxiety) than control women but less than ED women. Obese women wanted to feel full inside, wanted to always eat more, and ate to help their mood while ED patients wanted to feel empty inside and felt more preoccupied with thoughts of food, eating and body weight. QOL ED global scores discriminated BED women from controls. **Conclusion:** The QOL ED may be a useful tool to examine the ED- and psychological feelings-related QOL of women before LSG as it may help to predict weight loss success post-surgery and therefore indicate follow-up management.

P.442 Lesions that Mimic Liver Metastasis During Bariatric Surgery Leading to Cancellations Sclerosing NASH and Von Meyenburg Complex; A Case Series

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Introduction: Sclerosing non-alcoholic steatohepatitis (NASH) and Von Meyenburg complex (VMC) can mimic liver metastasis resulting in the

abandonment of a bariatric procedure. We present a picture case series of lesions resembling liver metastasis during bariatric surgery resulting in operative cancellations.

Methods: The case notes of all intra-operative cancellations, liver biopsies and unusual diagnostic laparoscopy findings were reviewed.

Results: Ten bariatric surgery patients had lesions resembling liver metastasis on diagnostic laparoscopy as part of their bariatric surgery. A histological liver biopsy sample was taken in six patients and some procedures were initially abandoned. Two of these biopsy samples confirmed sclerosis with NASH, and four samples showed Von Meyenburg complexes. The other four remaining cases were thought to be typical appearances of sclerosing NASH and Von Meyenburg complexes and bariatric surgery was performed.

Conclusion: Increasing awareness of these mimicking lesions can help prevent the intra-operative cancellation of a bariatric operation. Liver biopsy can be performed during the operation if doubt remains.

P.443 Use of Endoscopic Stents in Staple Line Leaks After Laparoscopic Sleeve Gastrectomy (LSG)

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Introduction: Most feared complications after LSG are related to staple line dehiscence, which involve a challenging management. Endoscopic stent placement (ESP) as part of minimally invasive approach is an alternative to consider. We present our experience with this technique in treatment of leaks due to staple line dehiscence after laparoscopic sleeve Gastrectomy (LSG).

Method: case series of patients treated at one center describing demographics and clinical outcomes of patients submitted to LSG who evolved with gastric leaks and required endoscopic stent placement as part of their management.

Results: From March 2009 to April 2012, 7 patients (4 female), mean age 33 (\pm 10.2) years, mean preoperative BMI 36.5 (\pm 5.8) kg/m². 10 metallic, self expandable stents were placed. All patients had a demonstrated staple line leak, 6 with associated abdominal collections and 1 case of diffuse peritonitis. 3 cases showed distal stricture. Mean time from surgery to clinical symptoms of 8.7 (\pm 4.3) days. Stent placement was successful as definitive treatment in 5 cases, with evidence of persistent leak in 2 cases which resolved with conservative measures. 5 cases required additional interventions: 3 submitted to

reoperation and 2 to percutaneous drainage of collections. 3 patients experienced complications associated to stent placement: 2 cases of migration and 1 impaction all solved endoscopically. Mean time to clinical resolution of leaks 56 (\pm 15.3) days. No mortality in this series.

Conclusion: ESP of staple line leaks after LSG is an alternative to consider, regarding a careful evaluation of each case.

P.444 Our Experience in Laparoscopic Removal of Migrated Adjustable Gastric Bands

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Introduction: Morbid obesity currently is a serious condition that threatens the general public health in developing and developed countries globally. Bariatric surgery is the most efficient form of treatment of morbid obesity providing good and sustained weight loss and metabolic control. Laparoscopic Gastric Banding is a safe, efficient, feasible and reversible bariatric surgical technique. However there are some short term and long-term complications of this technique. Intra-gastric band erosion and band migration is a rare but a long-term major complication. There has been certain endoscopic and laparoscopic techniques have been developed but there is no consensus on the standard technique. Here in as being experienced in both techniques aim to provide our outcomes on laparoscopic band removal and show that it is as feasible and safe as compared the other techniques.

Materials and Methods: We have evaluated retrospectively the complications the 2750 laparoscopic adjustable gastric banding (LAGB) cases. We have extracted the data of 15 (0.54 %) cases of gastric band migration and out of those 7 of them who underwent laparoscopic removal of the band. We have evaluated the chief complaints, time to erosion, post-operative hospital stay and postoperative complication.

Results: The chief complaints of these patients were nausea and vomiting, abdominal and back pain and hematemesis. The median time to complication was 5 years after the operation. All of these 7 patients were operated laparoscopic ally and band removal with closure of gastrotomy was done. All the patients were discharged uneventfully postoperatively. The mean hospital stay was 2 \pm 1.2 days.

Conclusion: Laparoscopic band removal is a safe and effective method for the treatment of band migration which is a long-term and sometimes life threatening complication after LAGB surgery.

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