

## Laparoscopic management of a 20-cm ovarian cyst in a patient with a BMI of 70: a case report

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Received: 20 September 2007 / Accepted: 28 November 2007 / Published online: 4 January 2008  
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**Abstract** A woman in her mid-40s with a body mass index (BMI) of 70 presented with lower abdominal pain of 24-h duration. The trans-abdominal scan revealed a large cystic ovarian mass. Laparoscopic salpingo-oophrectomy was performed by placing six ports in the upper abdomen; initial Verres needle entry and pneumoperitoneum were established through the left upper quadrant. A low CA-125 and the benign appearance of the ovary allowed the operation to continue laparoscopically with fewer perioperative complications. The histology of the specimen demonstrated a benign epithelial serous cystadenoma of the ovary with torsion.

**Keywords** Laparoscopy · Ovarian cyst · Morbid obesity

### Case report

A 45-year-old woman presented with acute lower abdominal pain for 24 h, but with a history of dull aching over the preceding six weeks. Her menstrual cycles were irregular. She is a mother of a 12-year-old child, born by normal vaginal delivery. She was morbidly obese with a body mass index (BMI) of 69.2 (i.e. with weight 162.5 kg and height 153 cm). Her medical history revealed a hiatus hernia,

hypercholesterolemia, non-insulin-dependant diabetes mellitus and panic attacks. On admission, her vital signs were normal and abdominal examination revealed a large, soft, tender and regular mass arising from the pelvis. Full blood count, renal and liver function tests were within the normal range, with CA-125 at 1.4 U/ml, CEA 12 U/ml and  $\alpha$ -fetoprotein 2.6 U/ml. The trans-abdominal scan revealed a multiloculated cyst larger than 20 cm, suggesting ovarian origin, with a low-risk malignancy index. Twelve days later, she underwent planned laparoscopic right salpingo-oophrectomy, cystoscopy, intravenous pyelogram (IVP) and stenting of the right ureter under general anaesthesia. The initial entry with Verres needle and pneumoperitoneum were established through the left subcostal region. The procedure was carried out by the six-port technique, with all ports placed in the upper abdomen.

Intraoperative findings revealed a large ovarian cyst with surface petechial haemorrhages, areas of necrosis, chronic torsion with ten loops and right hydrosalpinx. Five litres of fluid were aspirated from the cyst. The excised right fallopian tube and ovary were placed into two separate bags, and the pedicle was tied with an endoloop. In order to check the integrity of the right ureter, two intra-operative IVPs were performed. As these test findings were inconclusive, cystoscopy and right ureteric stenting were carried out.

Finally, two drains were left in the pelvis and deep fascial layers were closed at 10-mm laparoscopic ports. Overall, the operation took six and half hours, including three hours of laparoscopic work; the remaining time was spent with ureteric checks and stenting. Postoperatively, she was observed in the high dependency unit for 24 h. Her recovery was uneventful and she was discharged five days later. Histology of the specimen revealed a benign epithelial serous cystadenoma of the ovary with torsion.

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## Discussion

Many advanced laparoscopic procedures have been observed to be safe and feasible in women with a high BMI [1]. The safety of these procedures have also been established in most gynaecological surgeries in the form of reduced intraoperative blood loss, postoperative pain, rates of wound infection or dehiscence, hospital stay and financial costs when compared to laparotomy. The patients undergoing laparoscopic surgery have also been known to have fewer postoperative ileuses, urinary tract infections and febrile morbidity [2, 3].

Patients with a high BMI represent a challenge for surgeons and anaesthetists alike, since they are associated with sudden death and a wide range of co-morbidities, such as hypertension, atherosclerosis, angina, chronic obstructive pulmonary disease and diabetes mellitus [3]. A high BMI also creates certain technical difficulties in laparoscopic surgery, particularly when establishing pneumoperitoneum, due to abdominal wall thickness and pre-peritoneal fat [4]. In obese patients, insufflation can be successfully established through left subcostal entry [5].

Unfortunately, due to body habitus, our patient was unable to have a computed tomography (CT) or magnetic resonance imaging (MRI) scan prior to surgery. The surgical procedure we adopted was complicated and labour-intensive. Laparoscopy represents a good alternative for surgical interventions in patients with a very high BMI

if preoperative evidence suggests that the cyst is benign [6]. The low CA-125 and benign appearance of the ovary allowed the operation to continue laparoscopically with fewer perioperative complications, along with good postoperative recovery with greater patient satisfaction.

The surgical intervention in morbidly obese patients requires careful preoperative assessment and a multidisciplinary approach, especially under the guidance of an experienced laparoscopic surgeon.

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