

Apronectomy with repair of large ventral hernia in a morbidly obese patient

D. Joshi · J. Shah · S. Kamat · S. Chopra ·
S. Nachimuthu · C. Mukundan · S. Sarin

Received: 18 July 2006 / Accepted: 25 July 2006 / Published online: 10 October 2006
© Springer-Verlag 2006

Abstract A 42 year old female with a body mass index of 47 presented to the general surgical outpatient clinic with a large apron of skin hanging from the anterior abdominal wall. This adversely affected her mobility and was prone to intertrigo. It was also complicated by the presence of a large ventral hernia with propensity for recurrent incarceration. Apronectomy with repair of ventral hernia was performed. A novel technique to anchor the heavy apron was employed. The apron was anchored to an overhead steel bar by means of large orthopaedic Steinman's pins and stirrups. A total of 18.5 kg of skin and soft tissue were removed. The patient had difficulty in weaning off the ventilator and spent 3 weeks in the intensive care unit. There were no other complications. There was marked improvement in her mobility and overall quality of life after the operation. Apronectomy can be safely performed in conjunction with ventral hernia repair. This method of anchoring the apron greatly facilitates an otherwise difficult operation. The number of operators as well as the operating time is reduced.

Keywords Apronectomy · Abdominoplasty · Ventral hernia · Obesity · Steinman's pin

Introduction

Apronectomy is a common surgical procedure performed mostly for aesthetic reasons. The purpose of this article is to demonstrate apronectomy in a morbidly obese 42 year old female in conjunction with the repair of a large ventral hernia. We also demonstrate a simple method to anchor the heavy apron of skin and soft tissue to facilitate surgery.

Case report

A 42 year old female presented to the general surgical outpatient department with the chief complaint of a large fold of skin hanging from her anterior abdominal wall (Fig. 1). It adversely affected her mobility and was susceptible to recurrent infections. She had previously undergone caesarean section and repair of paraumbilical hernia. The hernia had recurred and had become incarcerated on four occasions prompting emergency admissions to the hospital. On all occasions her symptoms were resolved with conservative treatment.

Her past medical history included morbid obesity, non-insulin dependent diabetes mellitus, hypertrophic obstructive cardiomyopathy, essential hypertension, asthma, psoriasis, narcolepsy and depression.

On examination, she had a body mass index of 47. A large apron of skin and soft tissue was hanging from the anterior abdominal wall reaching down to her knees. It was not possible to identify the umbilicus. However, a scar from previous paraumbilical hernia repair was visible near the distal end of the apron. The skin on the under surface of the apron was involved with intertrigo. On palpation, proximally there was an underlying multiloculated mass with a positive expansile cough impulse signifying the presence of incisional hernia.

D. Joshi (✉) · S. Kamat · S. Chopra · S. Nachimuthu ·
C. Mukundan · S. Sarin
Department of General Surgery,
Watford General Hospital,
Vicarage Road,
Watford, WD18 0HB, UK
e-mail: drdjoshi@yahoo.co.uk

J. Shah
Department of Anaesthesiology,
Watford General Hospital,
Vicarage Road,
Watford, WD18 0HB, UK



Fig. 1 Lateral view of the patient showing a large abdominal apron and ventral hernia

Her various co-morbidities put her in the ASA grade 3 anaesthetic risk category and giving anaesthesia to her was a difficult and challenging proposition.

Informed consent was given and the patient was taken to the operating room after optimising her medical conditions. General anaesthesia was administered and the patient placed supine (Fig. 2). Two Steinman pins were stabbed through the distal end of the apron and the apron was



Fig. 2 Position of the patient on the operating table



Fig. 3 a and b Anchoring the apron by means of Steinman's pins, stirrups and steel chain to an overhead steel bar supported by drip stands

hitched up vertically. Each pin was attached to a stirrup. The stirrups were then attached to an overhead horizontal steel bar by steel chains. The horizontal bars were supported on either side by IV stands (Fig. 3).

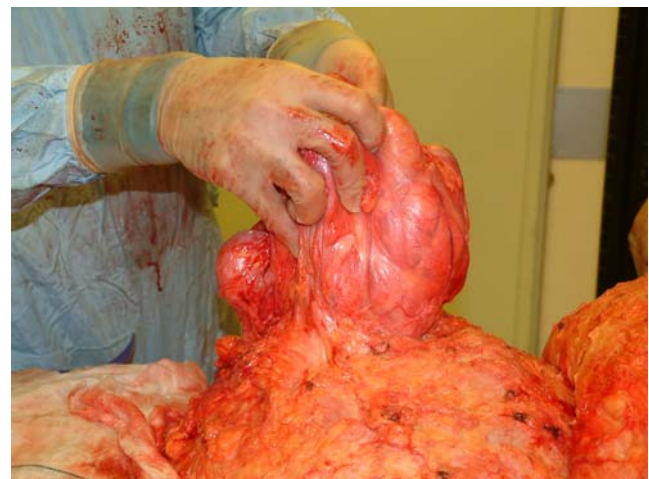


Fig. 4 Dissected hernial sac

The incision lines were marked around the base of the apron in a semi-lunar fashion with the concave side facing superiorly. The upper edges of the incision reached the posterior axillary line in the transpyloric plane (Fig. 3). The skin and the fascia was incised along the pre-marked site down to the aponeurosis of the external oblique laterally and the anterior rectus sheath medially. The technique of suspending the apron greatly facilitated the dissection. The multiloculated hernial sac was then dissected in this plane and freed from the apronectomy specimen (Fig. 4). The contents of the hernial sac were then replaced into the abdominal cavity with difficulty. The apronectomy specimen measured 150×60 cm and weighed 18.5 kg (Fig. 5).

The peritoneal margins were sutured with continuous 2/0 polyglactin 910. The preperitoneal plane was further dissected to place a 30×30 cm polypropylene mesh under the rectus muscle. Five large negative suction drains were placed in the wound, two in the preperitoneal plane and three in the subcutaneous plane. Hemostasis was achieved and the wound was closed in two layers. Interrupted 2/0 poliglecaprone 25 sutures were used for skin closure (Fig. 6).

The postoperative period was marked by problems of difficulty in weaning off the ventilator and consequent chest infection. This resulted in a 3-week stay in the intensive care unit. The drains were removed on the tenth postoperative day. The wounds healed well and she was discharged home in good condition.

There was marked improvement in her mobility, mood and general fitness after the procedure. At 8 weeks following surgery, she is making efforts to lose more weight, has given up smoking and is thinking of going back to work.

Discussion

Apronectomy, abdominoplasty or panniculectomy is a common procedure performed for cosmetic reasons. The



Fig. 5 The apronectomy specimen is shown alongside a 1-m gauze



Fig. 6 Completed repair

incidence of apronectomy being performed in conjunction with a ventral hernia repair has not been reported widely in the literature. Similarly there are very few reports of the procedure being performed for reasons of immobility, intertrigo and depression.

This patient was suffering from recurrent episodes of intertrigo and was being socially and professionally alienated due to her immobility and incapacitation.

The postoperative complication of delayed extubation and chest infection is well-known in obese patients. Other complications of apronectomy are either wound complications (wound infection, partial wound dehiscence, seroma, hematoma, and skin edge necrosis) or complications after surgery (deep venous thrombosis, pulmonary emboli, ileus, altered sensation of the skin of the thighs, and death) [3]. The incidence of injury to the lateral cutaneous nerve of the thigh varies from 10% to 30% [1, 3].

The main difficulty of operating on aprons of enormous size and weight is that several assistants are required to handle and retract the tissue in very limited space. The operative field is frequently obscured. Ollapallil et al. have described a similar technique for anchoring the apron by using a small crane and using it to retract the tissue during the operation [2]. We have demonstrated a more simple method of anchoring the apron using readily available equipment in any operating theatre. This resulted in greater ease of tissue handling and reduction of operative time. The procedure required only three operators: a surgeon and two assistants.

Conclusion

Apronectomy can be safely performed in conjunction with the repair of ventral hernia. This method of anchoring the apron greatly facilitates an otherwise difficult operation.

References

1. Floros C, Davis PK (1991) Complications and long-term results following abdominoplasty: a retrospective study. *Br J Plast Surg* 44:190
2. Ollapallil J, Koong D, Panchacharavel G, Butcher C, Yapo B (2004) New method of abdominoplasty for morbidly obese patients. *ANZ J Surg* 74:504–506
3. Van Uchelen JH, Werker PM, Kon M (2001) Complications of abdominoplasty in 86 patients. *Plast Reconstr Surg* 107: 1869–1873