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Peritoneal flap hernioplasty for large ventral hernia: A case report

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INTRODUCTION

Incisional hernias can be defined as any gap in the abdominal wall in the area of a postoperative scar, with or without a bulge, which may be perceptible or palpable upon examination or imaging (1). These hernias can be repaired through open or laparoscopic methods, with open techniques being simple hernioplasty, components separation, or mesh repair (2, 3). We present a case of incisional hernia who successfully underwent peritoneal flap hernioplasty.

CASE REPORT

A 46 years old lady presented with an incisional hernia post laparotomy, distal pancreatectomy and splenectomy for distal pancreatic carcinoma, which was complicated with wound breakdown post operatively. On examination, there was a large swelling over the anterior abdominal wall at the previous wound.

A computed tomography (CT) scan revealed a large defect measuring approximately 13x18cm at the midline of the anterior abdominal wall with herniation of small and large bowel loops (Figure 1). She was counselled for repair, and successfully underwent peritoneal flap hernioplasty with retrorectus mesh insertion. Figures 2 to 5 illustrate the steps involved in this technique.

The previous scar was excised, exposing the peritoneal sac. Lateral dissection of the subcutaneous tissue was performed to expose the external oblique aponeurosis up to the linea semilunaris (Figure 2). The hernia sac was then incised and entered in the midline, over the full length of the defect (Figure 3). The peritoneal flaps were then developed. The peritoneal cavity is closed by suturing the flap of the anterior sheath from one side to the posterior rectus sheath on the other side (Figure 4). Subsequently, a polypropylene mesh was placed at the retrorectus space, with a drain inserted above the mesh. The remaining peritoneal flap was then closed over the mesh and sutured to the anterior rectus sheath (Figure 5). A drain was inserted in the subcutaneous layer and skin was closed.

Post operatively, the patient had an uneventful recovery, and was discharged well. At follow up 3 months later, she reports to be well, with no recurrence.

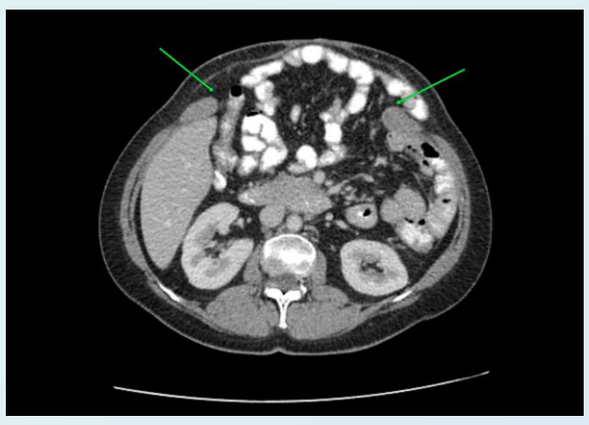

Figure 1. Arrows depicting the anterior abdominal wall defect as seen on CT scan.

Figure 2. Lateral dissection performed and hernia sac isolated.

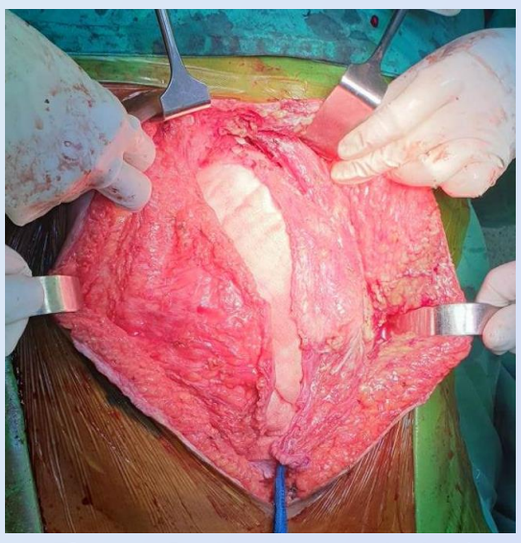

Figure 3. Hernia sac incised and entered.

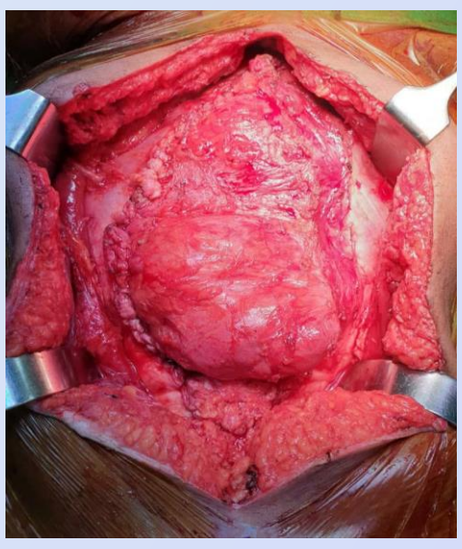

Figure 4. Peritoneal cavity closed with the peritoneal flap from one side to the posterior rectus sheath on the other side.

Figure 5. Mesh covered with the remaining peritoneal flap.

DISCUSSION

Incisional hernias are common complications of abdominal surgery, with incidence being reported as between 11-25% (4). Risk factors for the development of incisional hernias include emergency surgery, post operative wound infection and wound dehiscence, obesity, diabetes, and smoking (5).

Repair of incisional hernias can be done laparoscopically or through open surgery. However, the laparoscopic method of repair may not be feasible in all patients, especially in those with large hernias, as is the case for this patient, and open surgery may be a better option (6). Closure may also be challenging in patients who have defects which are too large for primary fascial closure (6, 7), and using a mesh to bridge the defect may bring about risks such as infections, adhesions, and formation of fistulas, which may increase morbidity (5, 6).

Various techniques have been described in the open repair of ventral incisional hernias, including open suture repair (3), open inlay and onlay mesh techniques, tissue expansion assisted closure, and components separation technique (5). The components separation technique aims to facilitate closure in the midline, however extensive dissection into the lateral planes of the abdominal wall may affect the integrity of the lateral abdominal wall (7). To compensate, a large mesh which extends into the flanks is placed, however this can possibility affect the function of the abdominal wall, which may arise from fibrosis brought about by mesh placement, or from the extensive dissection of the lateral abdominal wall (7).

Nielson et al described a method for reconstruction of large abdominal wall defects by the peritoneal flap technique, which uses the hernia sac to bridge the fascial defect (7, 8), which we have successfully performed on this patient. This technique involves the exposure of the sac and fascial margins, creating the peritoneal flaps, developing the retrorectus space, followed by closure of the peritoneal cavity and insertion of the mesh, and completing the fascial closure (6-9). Studies on the use of peritoneal flap hernioplasty for large ventral hernias have shown promising results, with low rates of complications and low recurrence rates of hernia (6-9).

CONCLUSION

Incisional hernias can develop as complications post abdominal surgery, and can be repaired by laparoscopic methods or open surgery. Repair of large hernias may prove to be difficult, especially where primary fascial closure cannot be obtained. In such cases, peritoneal flap technique can be used, and studies thus far has shown promising results with the use of this technique for midline and transverse/oblique ventral hernias.

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