

Case Report

A morbidly obese patient with large incisional hernia managed with posterior compartment separation sub-lay mesh placement

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ABSTRACT

Most of the incisional hernias are diagnosed in first 3 years after the major abdominal surgery but some may take 9-10 years before the presentation after surgery. Risk factors to develop incisional hernia includes patient factors; advanced age, hypertension, diabetes, obesity, anemia, smoking, chronic obstructive pulmonary disease (COPD), immunosuppression, previous coronary intervention, renal disease requiring dialysis, recent weight loss and malnutrition. Surgery related risk factors includes intraoperative complication, suture technique, surgical site infections, fascial dehiscence and other postoperative complications. We are presenting of large incisional hernia, which have managed with posterior compartment separation. Large incisional ventral hernias following abdominal surgeries can pose significant challenges in management and quality of life for both patients. The Rives-Stoppa repair technique provides authentic and essential solution for management of large complex ventral hernias with reducing the risk of recurrence and providing long-term support to the abdominal wall.

Keywords: Large incisional hernia, Retrorectus, Transverse abdominis release, Surgical site infection

INTRODUCTION

Patient who underwent major abdominal surgeries, approximately 20% would develop incisional hernia. Subclinical acute dehiscence is the formation of gap between the opposed midline fascial edges which leads to incisional hernia.^{1,2} Most of the incisional hernias are diagnosed in first 3 years after the major abdominal surgery but some may take 9-10 years before the presentation after surgery.

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complications.³ We are presenting of large incisional hernia, which have managed with posterior compartment separation.

CASE REPORT

47-year lady came with chief complaint of swelling in the lower abdomen for 2 months. She underwent open myomectomy for fibroid uterus 6 months back. She had surgical site infection at that time, dressing was done for 2 weeks and secondary closure was done. She remained asymptomatic for 4 months but developed swelling in lower abdomen 2 months back. She had no symptoms suggestive of obstruction. She had no other known comorbidity. On examination, she was obese lady with body mass index (BMI)- 32.4 kg/m², afebrile, vitals in normal range. Chest was normal and per abdomen large hernia in lower abdomen with cough impulse, lower midline scar (10 cm) in lower abdomen with defect of

10×10 cm defect in lower abdomen (Figure 1). Contrast enhanced computed tomography revealed 8 cm defect in anterior abdomen along right side with herniation of omentum and small bowel, bulky uterus with small fibroid, caverisation of portal vein (Figure 2). Gynecologist consultation was taken in view of fibroid uterus but no intervention required from their side. Patient was planned for incisional mesh hernioplasty.

Under general anesthesia, abdominal was opened with midline incision, adhesinolysis was done to separate the hernia sac from the abdominal wall and fascia. We used blunt dissection to peel off the hernia sac to dissect in the correct plane and preserved the maximum thickness of the overlying skin and subcutaneous fat. The hernia sac was excised along the fascial edge, to preserve for planned retro rectus repairs which would be used as additional tissue for posterior sheath closure. The posterior rectus sheaths incised; the posterior seath was separated from the rectus abdominis which created the space for mesh placement (Figure 3).

This dissection was carried laterally to the linea semilunaris, the lateral border of the rectus abdominis muscle to recognize lateral perforating neurovascular bundles. Posterior compartment separation i.e., transverse abdominis was released, 1 cm medially to linea semilunaris and separated from transversalis fascia with blunt dissection with identifying psoas muscle laterally. Dissection continued inferiorly to Cooper's ligament in the space of Retzius and superiorly till the xiphoid for adequate dissection with separation of posterior seath from linea alba (Figure 4). Posterior rectus sheath was closed (Figure 5). 30×20 cm prolene mesh was placed, Jakson Pratt drain was inserted and anterior rectus seath was closed (Figure 6). Wound was closed in layers with vicryl and ethilon.

Post-operatively patient remained comfortable, enteral diet started after 6 hours, drain output gradually decreased. Drain removed on postoperative day (POD) 5 when drain output was minimal. Patient recuperated well and discharged on POD 6. Follow up remained uneventful.

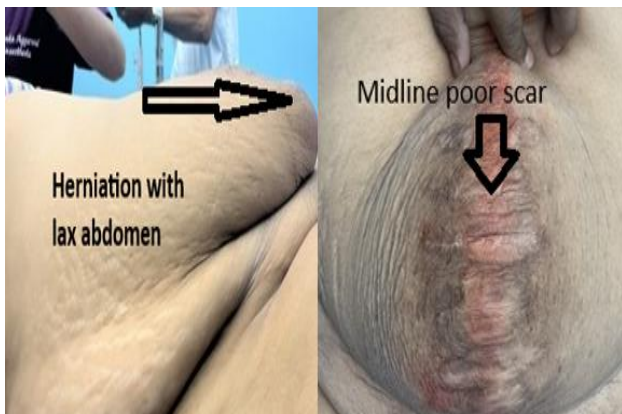


Figure 1: Showing midline poor scar with loss of domain.

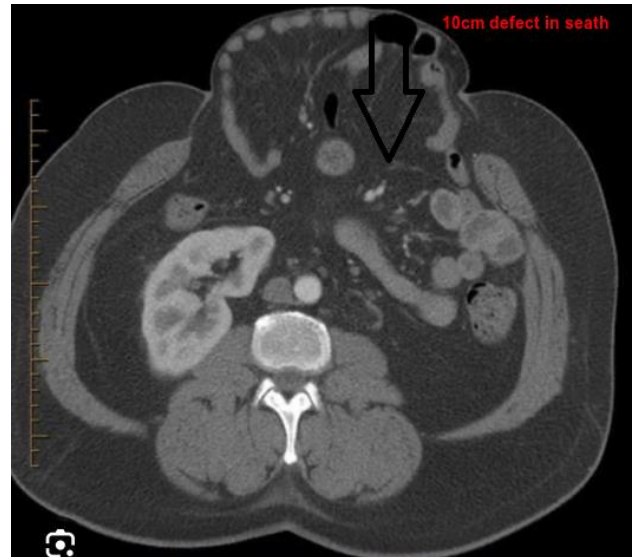


Figure 2: CECT abdomino-pelvis showing defect in anterior abdominal wall with herniation of small bowel.

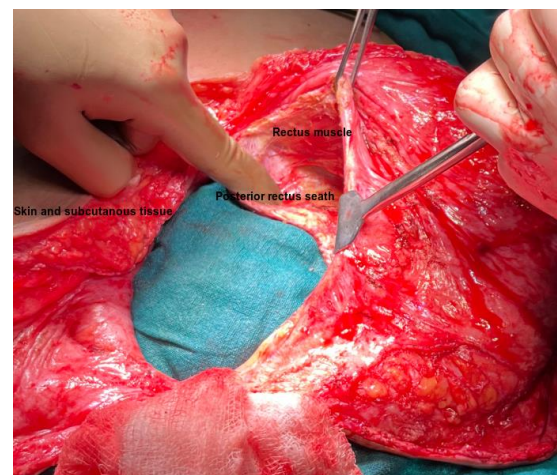


Figure 3: Intra-operative picture showing posterior seath separated from rectus muscle.

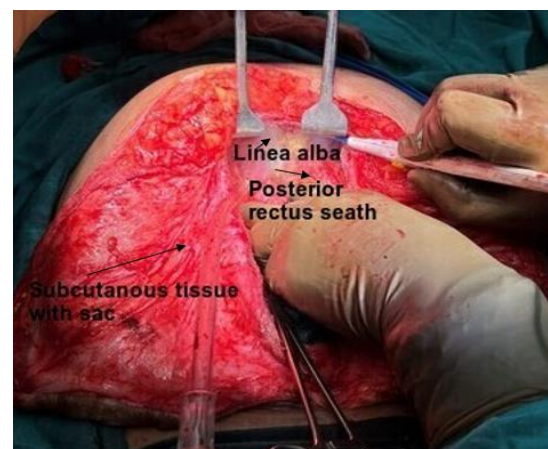


Figure 4: Showing posterior seath separating from linea alba.

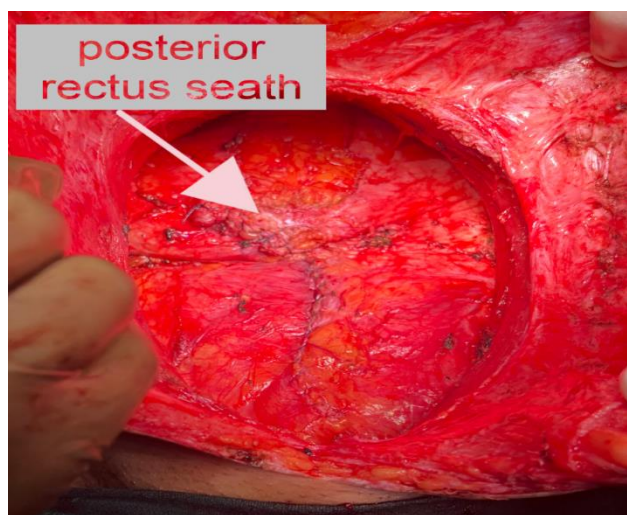


Figure 5: Closed posterior rectus sheath with vicryl no 1 suture.

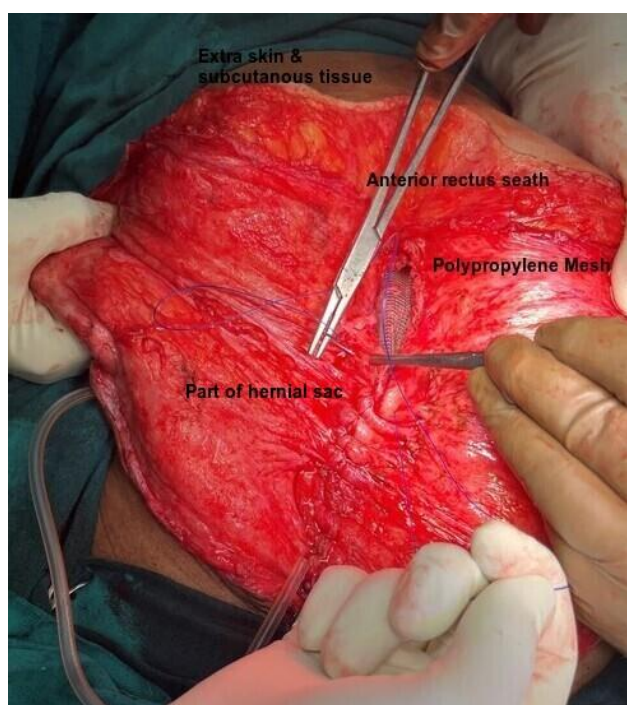


Figure 6: Showing the closure of anterior rectus sheath with prolene no. 1 suture after placing polypropylene mesh.

DISCUSSION

Hernias is defined as when there is a protrusion of abdominal contents through a weakened or disrupted abdominal wall fascia.⁴ Ventral hernias commonly seen in clinical day to day practice when there is defect in the fascia of the abdominal wall which are non-inguinal, non-hiatal. large Incisional ventral hernias occur when there is breakdown in the normal healing process of abdominal wall incisions are commonly seen after abdominal surgeries, including emergency laparotomy, hysterectomy, myomectomy etc.; which leads to significant morbidity

and impaired quality of life.⁵ There are multiple factors that lead to ventral incisional hernia development as follows: increased intra-abdominal pressure due to chronic constipation, chronic obstructive pulmonary disease, chronic liver disease; wound infections, poor suturing technique, and patient associated factors such as obesity, immune compromised and connective tissue disorders etc.⁶

The clinical presentation of ventral incisional hernia is a visible bulge or swelling seen over previously operated surgical scar becomes prominent on standing, coughing, straining; associated with pain and discomfort while doing routine activities. In some cases of strangulation or incarceration hernia, patients can present with the symptoms of bowel obstruction, such as abdominal pain, nausea, vomiting, and constipation associated with skin changes over it. In our case report, Patient presents with a large incisional ventral hernia following myomectomy. On physical examination, the first step in diagnosing a ventral incisional hernia depends on location, size, and characteristics if the hernia is reducible, incarcerated, or strangulated are assessed.⁷

Radiological diagnostic modalities play a major role in assessing the size, location, contents, and potential complications associated with it. Ultrasound is the first imaging modality useful for evaluating the hernia sac, its contents, and assessing for complications like incarceration or strangulation particularly valuable for small to medium-sized hernias.⁸ Computed tomography (CT) scans provide detailed cross-sectional images of the abdominal wall and hernia which helps in precisely measuring size of defect, identifying the contents of the hernia sac, and assessing the condition of surrounding structures. CT scans play a vital role for better management in large and complex hernias.⁹ In some complex ventral hernia, MRI is used for soft tissue evaluation.

The primary treatment for large incisional ventral hernias is surgical repair. The surgical repair of large incisional ventral hernias either open or minimally invasive by laparoscopic repair can be challenging in areas with limited tissue for reconstruction. In this case report, a well-established technique used for large ventral hernias is retrorectus with posterior compartment separation and sublay mesh placement. Advantages of this technique are as follows: it provides excellent support and integrity to the abdominal wall while it's recurrence rate with relief from hernia-related symptoms and durable results.¹⁰

The risk of hernia is reduced by using mesh reinforcement which provide additional strength to the repaired abdominal wall. Before mesh reinforcement, reduction of hernial sac content back into abdominal cavity before repairing the defect in large ventral incisional hernia. Despite large incisional ventral hernia surgical repair, it is associated with multiple complications include-recurrence particularly if the abdominal wall remains

weak, mesh infection, surgical site infection and strangulation or obstruction of bowel within the hernia sac can lead to bowel ischemia, necrosis, or perforation, which is again a surgical emergency. Different intraoperative and postoperative measures should be taken to prevent these complications and better surgical outcome.¹¹

In this case report, the better outcome of patient with large incisional ventral hernias following myomectomy is generally favourable with appropriate surgical intervention. Successful surgical repair can reduce symptoms and signs, improve the patient's quality of life, prevent complications and better outcomes. To prevent recurrence, this case report highlights the major role of careful surgical approach and mesh reinforcement to strengthen the repaired defect over the anterior abdominal wall.¹²

CONCLUSION

Large incisional ventral hernias following abdominal surgeries can pose significant challenges in management and quality of life for both patients. The Rives-Stoppa repair technique provides authentic and essential solution for management of large complex ventral hernias with reducing the risk of recurrence and providing long-term support to the abdominal wall. Early presentation, timely diagnosis, appropriate surgical repair with mesh reinforcement, and peri operative care are essential elements for achieving better outcomes, reducing the risk of recurrence and improving the patient's overall quality of life. Routine follow-up and perioperative care guidelines are essential for enhancing the long-term prognosis.

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Ethical approval: Not required

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