International Surgery Journal
Verma S. Int Surg J. 2024 Mar;11(3):523-526
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20240591

Case Report

Complex management of larger strangulated incisional hernia in a post-multiple abdominal surgery in a morbidly obese patient-a case report and surgical review

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Received: 31 December 2023
Accepted: 06 February 2024

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ABSTRACT

Strangulated incisional hernia following a post-hernia repair is a serious and potentially rare life challenging condition that can occur after surgical intervention. Incisional hernias accounts for 15-20% of all abdominal hernias which occur at the site of a previous surgical incision where the integrity of the fascia has not been fully restored. We are presenting a case report of a 49 years lady who came with complaints of abdominal swelling and pain abdomen following multiple abdominal surgeries diagnosed with strangulated incisional hernia following post hernia repair. It was managed by emergency surgical intervention that is removal of previously kept mesh and resection of gangrenous segment of bowel with end ileostomy after keeping overall patient's condition.

Keywords: Incisional hernia, Strangulation, Prolene mesh, Intra-abdominal collection, Adhesinolysis, Multiple laparotomies

INTRODUCTION

Incisional hernia is the abdominal wall hernia which occurs at previous surgical incision. Midline incision has higher prevalence of incisional hernia as compare to other incisions. Patient usually present as bulge in abdomen, may cough impulse in not obstructed, but incisional hernia is at higher risk of obstruction, incarceration and strangulation.[1] Various factors lead to incisional hernia: surgical technique of abdominal wall closure, patient's factors include obesity, diabetes mellitus, chronic renal failure, and immunosuppression. Disease related includes emergency surgery and midline laparotomies has higher chances of incisional hernia.[2] Incarceration will be chronic asymptomatic in large hernial defects but it will be acute in small hernial defect. In patients having multiple comorbidities, temporary proximal colostomy or ileostomy may be required to allow the anastomosis for better outcome. Different intraoperative and postoperative measures should be taken to prevent complications and better surgical outcome.[3]

CASE REPORT

A 49-year lady came with a chief complaint of abdominal swelling for the last 5 years but now the patient has had pain in the abdomen for the last 10 days. She had discoloration of skin over the swelling for last 3 days. She had obstipation and fever for last 2-3 days. She had history of 2 lower segment caesarean section (LSCS) 22 years back, total abdominal hysterectomy 20 years back, open umbilical hernia repair 15 years back, open cholecystectomy 12 years back and open incisional hernia repair 8 years back. She remained asymptomatic for 3 years but had recurrence for 5 years. She had recurrent pain abdomen in swelling, took medication multiple times and advised surgery as well but refused for the same. She remained admitted in private hospital for pain abdomen 3-

4 days and came to us with septic shock. On arrival she was drowsy, afebrile, blood pressure was 80/50 mm of Hg, tachycardiac, SpO_2 was 94% at room air. Chest bilateral crepitus in basal area. Abdomen had scars of open cholecystectomy, lower midline scar of previous incisional hernia repair, transverse scar of umbilical hernia repair and Pfannenstiel incision. There was a large strangulated incisional hernia in lower side of abdomen toward right side with skin necrosis over the swelling (Figures 1 and 2).

Figure 1: Large incisional strangulated hernia with skin necrosis.

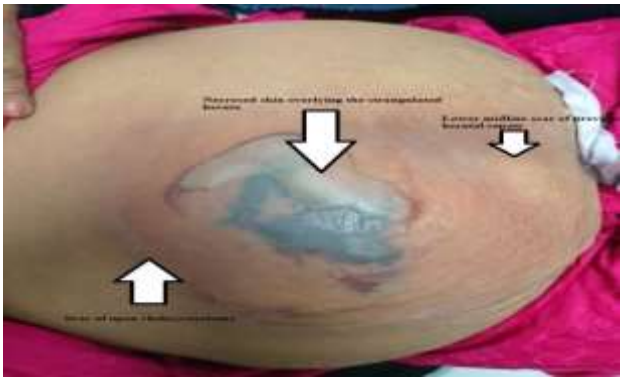

Figure 2: Swelling and skin necrosis over it.

She was immediately resuscitated with intravenous fluid, vasopressors, nasogastric tube insertion, Foley's catheterization, antibiotics. Immediately patient was planned for emergency surgery and family counselled, prognosis explained in detail. X-ray abdomen was done, which showed the jumbled-up bowel in right side of abdomen and dilated bowel (Figure 3).

She immediately underwent emergency surgery. Midline incision was made, hernial sac was identified. Intraoperatively gangrenous bowel with faecal matter in right side of abdomen with dense adhesion between loops (Figure 4). Gradually dissection progressed, mesh was present and densely adherent with bowel loops (Figure 5); 10cm defect noted in right side of abdomen with two small defects in midline; 50 cm of distal ileum with mesh was resected, right side of abdominal wall thoroughly debrided, irrigated (Figure 6). End ileostomy was made in the left iliac fossa after adequate mobilization. Defect was closed with prolene no 1 in intermittent fashion after putting abdominal drain in pelvis. 2 negative suction drain in subcutaneous plane in right iliac fossa. Extra skin and necrosed skin excised and wound closed with nylon suture 2-0. She was shifted to the intensive care unit on ventilator and vasopressor support.

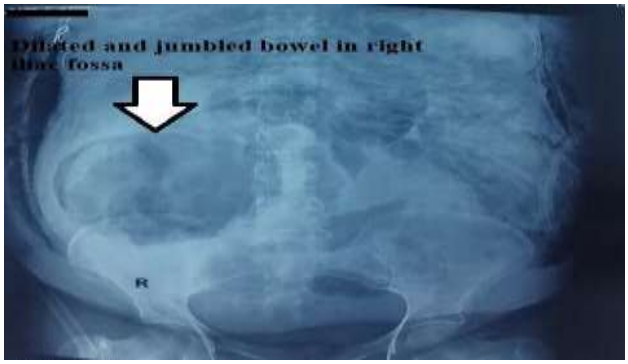

Figure 3: X-ray abdomen supine and erect showing dilated small bowel.

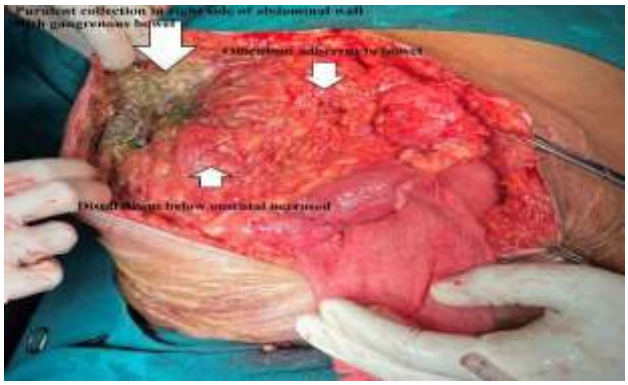

Figure 4: Gangrenous bowel with faecal matter in right side of abdomen.

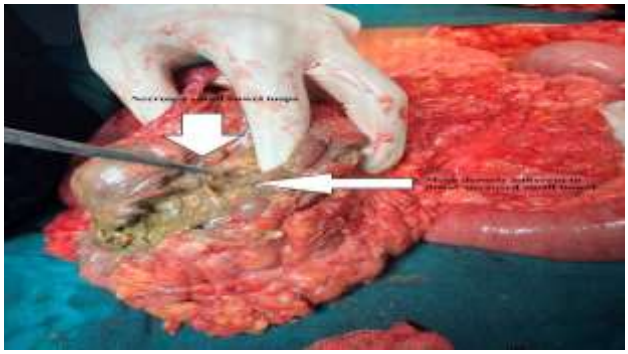

Figure 5: Mesh placed during previous surgery densely adherent with bowel loops.

Postoperatively, she remained on ventilator and vasopressor support for 72 hours. Gradually supports decreased, soma start functioning, adequate urine output. Gradually NG tube, foleys catheter removed. Enteral feed gradually progressed, shifted to ward. Abdominal drain was removed on postoperative day 5. She was

comfortable, hemodynamically stable, stoma functioning properly. She recuperated well and was discharged in satisfactory day on fifteenth postoperative day. On follow up, the subcutaneous drain was removed and remained comfortable.

Figure 6: Area of right iliac fossa after debridement.

DISCUSSION

Strangulated incisional hernia following a post-hernia repair is a serious and potentially rare life challenging condition that can occur after surgical intervention. Incisional hernias accounts for 15-20% of all abdominal hernias which occur at the site of a previous surgical incision where the integrity of the fascia has not been fully restored.[1,3] It involves the trapping of intra-abdominal contents, typically a segment of the intestine which occurs through a defect in the abdominal wall with constriction of herniated viscera becomes trapped and its blood supply is compromised, can rapidly progress to ischemia and gangrene of herniated viscera. Incisional hernia is at higher risk of developing in various complications like obstruction, incarceration and strangulation.[4]

Multiple risk factors are crucial in consideration for development of incisional hernia such as patient-related, techniques, biological and material-related factors are follows: narrow hernia defects are more prone to strangulation; scar tissue from previous surgery and changes in the abdominal wall dynamics; premature or excessive physical activity post-surgery can predispose to recurrence and strangulation are often more prone to complications; obesity, smoking, chronic cough, diabetes, constipation, and activities increasing intra-abdominal pressure are patients risk factors adversely affect wound healing; mechanical factors such as incision disrupts the natural architecture, postoperative intra-abdominal adhesions and strength of the abdominal wall can predispose to incarceration and strangulation; mesh infection, rejection and shrinkage can contribute to adhesion formation or can create a rigid border, increasing the risk of strangulation; biological factors such as impaired collagen synthesis and remodelling, reduced tissue oxygenation, wound healing; and surgical techniques of abdominal wall closure, excessive tension on tissues, improper dissection and emergency surgery often leads to a higher risk of infection and poor wound healing.[1,3]

Patients present with sudden severe localized pain at the previously operated hernia site, often worse than previous hernia pain; nausea, vomiting, altered bowel habits such as obstipation and constipation along with abdominal distension as obstructive symptoms and fever, tachycardia or hypotension as signs of systemic infection or sepsis. Local signs of skin changes as erythema, necrotic patch; a firm, irreducible mass and tenderness over the hernia site; Generalized abdominal tenderness, guarding and rigidity.[5]

Different radiological imaging modalities such as ultrasound, X-ray, computed tomography (CT) scan and magnetic resonance imaging (MRI) are used to confirm the site, size, extent, type of wall defect, content of hernial sac, compromise in vascularity, involvement of surrounding structures and associated complications such as fluid collections, infected mesh, bowel obstruction, adhesions, enterocutaneous fistulas or bowel ischemia.[6] Abdominal X-rays can reveal characteristic findings of intestinal obstruction, including multiple air-fluid levels suggestive of bowel distension and the presence of gas in the herniated loop of bowel. CT scan is the most effective modality for diagnosing and assessing severity of strangulated hernia.[7]

Strangulated incisional hernia post hernia repair is a surgical emergency which requires early recognition, diagnosis and prompt surgical intervention is required to address both the strangulated bowel and to release and reduce the compromised hernia contents, maintain anatomical continuity and repair the hernia defect. The gold standard management of hernia repair by surgical intervention either using open or laparoscopic repair techniques with component separation for large defects to reduce tension. With evolution, laparoscopic repair techniques more preferable which is less invasive, reduced postoperative pain and shorter recovery period. In this case report, patient presented with strangulated incisional hernia post hernia repair which is a surgical emergency managed by open technique. During surgical exploration, to assess and possibly resect the affected bowel segment with hernia repair which may involve revising or replacing the existing mesh and repairing the hernia defect. Delay in surgical intervention increases the risk of bowel necrosis and sepsis. In some cases, where the bowel is gangrenous but salvageable, an ileostomy may be created which allows for bowel rest and ensures faecal diversion, particularly in the context of potential contamination or compromised bowel integrity. In strangulated incisional hernia with faecal contamination, the hernia defect is addressed under challenging circumstances due to inflammation and altered anatomy. During hernia repair, it might involve the use of synthetic or biological mesh, especially in large defects or when tissue quality is poor; but presence of infection or severe inflammation may necessitate a tissue-only repair.[8,9]

Modifiable risk factors in prevention of incisional hernia are smoking cessation, weight management, controlling chronic cough and constipation, optimal surgical techniques, glycaemic control in diabetics, postoperative wound care and avoiding activities that increases intra-abdominal pressure are essential. Regular follow up especially important patients with high risk factors for recurrence.[10]

CONCLUSION

Incisional hernia is a multifactorial complex clinical problem requiring a tailored approach based on individual patient factors and hernia characteristics. Strangulated incisional hernia following post incisional hernia repair is a complex emergency condition requiring early recognition, diagnosis and prompt skilful surgical intervention. A comprehensive approach encompassing patient selection; advances in surgical technique i.e. decision to perform an ileostomy and the method of hernia repair must be individualized, the extent of bowel compromise, and the specifics of the hernia defect; postoperative care and ongoing research is vital to reduce the incidence of recurrence and improve overall outcomes in hernia repair.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Verma S, Vidit, Kataria G, Chatterjee R, Arora BK. Complex management of larger strangulated incisional hernia in a post-multiple abdominal surgery in a morbidly obese patient-a case report and surgical review. Int Surg J 2024;11:523-6.