

Case Report

External fecal fistula secondary to ileal perforation in an incarcerated incisional hernia: a rare case report

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ABSTRACT

Incisional hernia is a common complication following abdominal surgery, with an incidence of 10–20% after laparotomy. Although most incisional hernias remain reducible, long-standing hernias may become incarcerated and, rarely, result in bowel perforation with overlying skin necrosis and external fecal fistula formation. We report the case of a 35-year-old woman with a long-standing incisional hernia following a lower segment caesarean section performed six years earlier. She presented with abdominal pain, localized edema, skin necrosis, and fecal discharge from the anterior abdominal wall. Emergency exploratory laparotomy revealed incarcerated ileal loops with a 0.5×0.5 cm perforation located approximately 40 cm proximal to the ileocecal junction and associated fecal contamination. Debridement, diversion loop ileostomy, and source control were performed. Following serial wound debridement, daily papain-urea dressings, clinical resolution of sepsis, and two consecutive sterile wound cultures, a planned second-stage abdominal wall reconstruction with polypropylene mesh was successfully undertaken. The postoperative course was uneventful, and the patient is currently awaiting elective ileostomy closure following nutritional optimization. This case highlights the importance of early recognition, prompt source control, and individualized staged abdominal wall reconstruction in managing this rare and life-threatening complication.

Keywords: Incisional hernia, Incarcerated incisional hernia, Ileal perforation, Enterocutaneous fistula, Emergency laparotomy

INTRODUCTION

Incisional hernia is a well-recognized complication of abdominal surgery, occurring in approximately 10–20% of patients following laparotomy.¹ Several risk factors contribute to its development, including wound infection, obesity, increased intra-abdominal pressure, poor surgical technique, and emergency surgery.²

Although most incisional hernias remain asymptomatic or reducible, approximately 6–15% may progress to incarceration during their clinical course, predisposing patients to bowel obstruction, strangulation, ischemia, and, rarely, bowel perforation.³ Spontaneous enterocutaneous or fecal fistula formation secondary to

an incarcerated incisional hernia is exceptionally uncommon, with only isolated cases reported in the literature.⁴

Early diagnosis and timely surgical intervention are essential to prevent life-threatening complications such as sepsis and peritonitis. The report describes a rare case of an incarcerated incisional hernia complicated by ileal perforation, overlying skin necrosis, and external fecal fistula formation, successfully managed by staged surgical treatment.

CASE REPORT

A 35-year-old female presented to the emergency department with abdominal pain, swelling over the lower

abdomen, and fecal discharge from the anterior abdominal wall for two days. She had undergone a lower segment caesarean section six years earlier and subsequently developed a progressively enlarging swelling at the operative site, consistent with an incisional hernia.

The swelling had been present for approximately one year but had recently become painful and irreducible. One day before presentation, she noticed fecal discharge through a small opening over the swelling, associated with worsening abdominal pain.

On examination, a large lower abdominal incisional hernia with extensive overlying skin necrosis was noted. The hernia was tense, irreducible, and contaminated with feculent discharge, suggesting bowel perforation within the hernia sac with external enterocutaneous communication (Figure 1). Laboratory investigations demonstrated leukocytosis suggestive of ongoing infection.



Figure 1: Preoperative clinical photograph showing a large lower abdominal incisional hernia with skin necrosis and feculent discharge suggestive of enterocutaneous communication.

A diagnosis of complicated incarcerated incisional hernia with bowel perforation and external fecal fistula was made, and the patient was taken for emergency exploratory laparotomy.

Intraoperatively, a large incisional hernia sac containing incarcerated ileal loops was identified. A 0.5× 0.5 cm perforation was present on the antimesenteric border of the ileum, approximately 40 cm proximal to the ileocecal junction, with surrounding fecal contamination. Extensive necrosis of the overlying skin and subcutaneous tissue was also present. All necrotic and infected tissues were excised, followed by thorough debridement (Figure: 2). A diverting loop ileostomy was created for fecal diversion (Figure: 3). Rectus plane formation with closure of the anterior rectus sheath was performed (Figure: 4), while definitive abdominal wall reconstruction was deferred because of the contaminated operative field.



Figure 2: Intraoperative specimen showing necrotic ileal segment with perforation and surrounding contaminated tissue.



Figure 3: Postoperative clinical image demonstrating diverting loop ileostomy with staged abdominal wall management after excision of necrotic skin. The laparotomy wound was left partially open to facilitate delayed secondary closure.

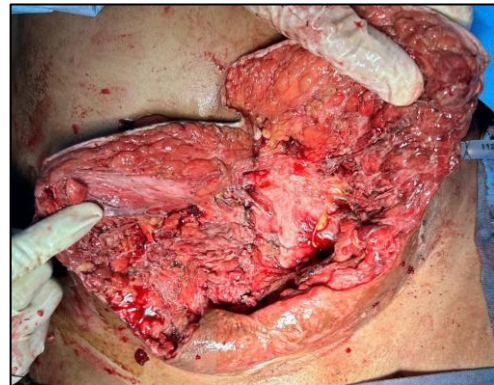


Figure 4: Intraoperative image demonstrating rectus plane formation with closure of the anterior rectus sheath during abdominal wall reconstruction following exploratory laparotomy for incarcerated incisional hernia with ileal perforation.

The patient received intravenous meropenem from the time of admission. Postoperatively, the wound was managed with daily dressings using papain (521,700 units) and urea (100 mg) ointment. Wound swab cultures were obtained on postoperative days 1, 3, 5, and 7. Cultures from postoperative days 1 and 3 grew *Escherichia coli*, whereas cultures obtained on

postoperative days 5 and 7 showed no bacterial growth, indicating satisfactory control of local infection.

Following serial debridement, clinical resolution of sepsis, healthy wound appearance, and two consecutive sterile wound cultures, a planned second-stage abdominal wall reconstruction was undertaken on 03/12/2025 under spinal anesthesia. A 15×15 cm polypropylene mesh was placed with a Romovac closed-suction drain, followed by secondary skin closure (Figure 5). The decision to proceed with mesh reinforcement was individualized after confirming satisfactory infection control and because reinforcement of the abdominal wall was required to achieve stable wound closure after extensive soft-tissue loss.



Figure 5: Postoperative photograph demonstrating secondary abdominal wall reconstruction with mesh reinforcement and secondary skin suturing following management of incarcerated incisional hernia with ileal perforation. A Romovac drain is seen placed for postoperative drainage.

Postoperative recovery was uneventful. The Romovac drain was removed on postoperative day 7. The patient tolerated oral intake well and was discharged in stable condition. At follow-up, the wound had healed satisfactorily without evidence of surgical-site infection,

DISCUSSION

Incisional hernias may remain asymptomatic for prolonged periods but occasionally present with life-threatening complications requiring emergency surgical intervention.² Risk factors include wound infection, obesity, emergency surgery, malnutrition, and poor fascial healing.² Approximately 6–15% of incisional hernias become incarcerated, and only a small proportion subsequently progress to strangulation and bowel perforation.³ External fecal fistula resulting from spontaneous bowel perforation within an incarcerated incisional hernia is exceedingly rare and has been described only in isolated case reports.⁴

Progressive pressure within the hernia sac compromises bowel and skin vascularity, eventually leading to ischemia, bowel perforation, skin necrosis, and external fecal fistula formation. These patients are at high risk of

sepsis, electrolyte imbalance, and wound-related complications.⁵

Although computed tomography is useful for evaluating complicated abdominal wall hernias, the presence of feculent discharge and suspected bowel perforation in our patient mandated immediate emergency laparotomy without delaying definitive treatment.

The primary objective in contaminated abdominal wall defects is adequate source control through bowel diversion, debridement, and control of sepsis. Definitive abdominal wall reconstruction in contaminated fields remains controversial. Most surgeons advocate delayed reconstruction several weeks later or after stoma reversal because permanent synthetic mesh placed in contaminated fields carries an increased risk of infection. However, recent studies have demonstrated that, in carefully selected patients with effective source control and resolution of active infection, staged reconstruction using polypropylene mesh can achieve acceptable outcomes with low recurrence rates.

In the present case, mesh reinforcement was intentionally deferred during the emergency procedure because of gross fecal contamination. Reconstruction was performed as a planned second-stage procedure only after serial debridement, continuous meropenem therapy, daily papain-urea wound care, clinical resolution of sepsis, healthy wound appearance, and two consecutive sterile wound cultures obtained on postoperative days 5 and 7. This individualized approach allowed secure abdominal wall reinforcement and successful secondary wound closure without postoperative wound infection or mesh-related complications.

Nevertheless, delayed abdominal wall reconstruction after 4–6 weeks or following ileostomy closure remains the preferred strategy in many patients with contaminated abdominal wall defects. Therefore, early staged mesh reconstruction should not be considered routine but rather reserved for carefully selected patients after meticulous infection control and careful clinical judgment.

CONCLUSION

Complicated incisional hernia presenting with ileal perforation, overlying skin necrosis, and external fecal fistula is an exceptionally rare but life-threatening surgical emergency. Prompt diagnosis, aggressive source control, bowel diversion, meticulous wound care, and staged reconstruction are essential for achieving favorable outcomes. This case demonstrates that, in carefully selected patients with adequate infection control confirmed by serial clinical assessment and sterile wound cultures, early staged polypropylene mesh reinforcement may be successfully performed. However, this strategy should be individualized, as delayed reconstruction remains the standard approach in most contaminated abdominal wall defects. The patient continues to do well

on follow-up and is currently being optimized nutritionally before elective ileostomy closure.

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