Section: Minimal Access Surgery

Case Report

LAPAROSCOPY-ASSISTED OPEN REPAIR OF RECURRENT UMBILICAL HERNIA COMPLICATED BY MID-ILEAL AND SKIN SURFACE MESH EROSION: A CASE REPORT

Kiran KJ[1], Wasim Akram M[2], Divya Lakshmi[3]

[1-3]Department of General, Laparoscopic, GI, Bariatric and Robotic Surgery, Apollo Hospitals, Bannerghatta Road, Bangalore, India.

Received : 01/01/2026
Received in revised form : 02/02/2026
Accepted : 17/02/2026

Keywords:
Ventral Hernia , Adhesions, Hybridization technique, Mesh Exposure , Recurrence

Corresponding Author:
Dr. Kiran KJ
Email: krn1980p@gmail.com

DOI: 10.47009/jamp.2026.8.2.1

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (2); 1-3

ABSTRACT

Background: Aim: To describe the presentation, intraoperative challenges, and surgical management of the complication, now known as mesh erosion into the bowel and skin surface, and the role of a hybrid approach for abdomens that have been previously operated upon. **Materials and Methods:** A case of a 35-year-old female patient with a past surgical history of several abdominal surgeries and presenting complaints of recurrent umbilical hernia and erosion of the mesh material from the surgical site, which indicated incarcerated omentum and the possibility of an entero-mesh fistula, as indicated by the presentation. Therefore, a plan of a laparoscopy-assisted open anatomical repair had been considered. A diagnostic laparoscopy had been performed first, followed by an open midline laparotomy precisely at mesh eroding area. **Results:** The intra-operative findings included adhesions of small bowel, omentum to anterior abdominal wall, and mesh; inter-bowel adhesions; and mesh erosion into a segment of mid-ileum of around 10 cm involving serosal breach and fibrino-purulent exudate exteriorly but without any evidence of intestinal perforation or peritonitis. The removal of the mesh was done as much as possible with resection and anastomosis of involved bowel segment. The postoperative period was uneventful, and the patient was asymptomatic at the end of 2 months without complications and recurrence. **Conclusion:** Erosion of mesh into the bowel is a rare serious postoperative complication of ventral hernia repair, especially in patients with multiple previous surgical procedures performed for various reasons. A hybrid laparoscopic-open approach for safer entry, precise assessment of adhesions, bowel integrity, and management of the mesh, with avoidance of iatrogenic bowel damage, can lead to good outcomes with low rates of recurrence and preservation of bowel length and avoidance of Large Laparotomy incisions.

INTRODUCTION

Mesh erosion into the bowel is a rare but serious long-term complication following ventral hernia repair with synthetic mesh. It results from chronic inflammation, mechanical irritation, or bacterial colonization at the mesh–tissue interface and may present months to years after implantation.[1,3]

The reported incidence ranges from 1–5% in large ventral hernia series, varying with mesh type, surgical technique, and patient factors.[1] Heavy-weight polypropylene meshes and patients with multiple prior abdominal surgeries carry higher risk.[3] Repeated abdominal operations such as lower segment cesarean section (LSCS), appendectomy, and laparotomies predispose to dense adhesions between bowel, omentum, and mesh. Additional risk factors include inadequate mesh overlap (<5 cm), direct mesh–bowel contact, and postoperative infection.[3,10]

Case Report

A 35-year-old female presented with a recurrent umbilical hernia complicated by superficial mesh exposure and suspected bowel erosion following multiple previous abdominal surgeries. The condition was managed by a laparoscopy-assisted open anatomical repair.

Presenting Complaint

The patient had a painless, reducible umbilical swelling measuring approximately 5 cm, with visible superficial mesh exposure through the skin for one year.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

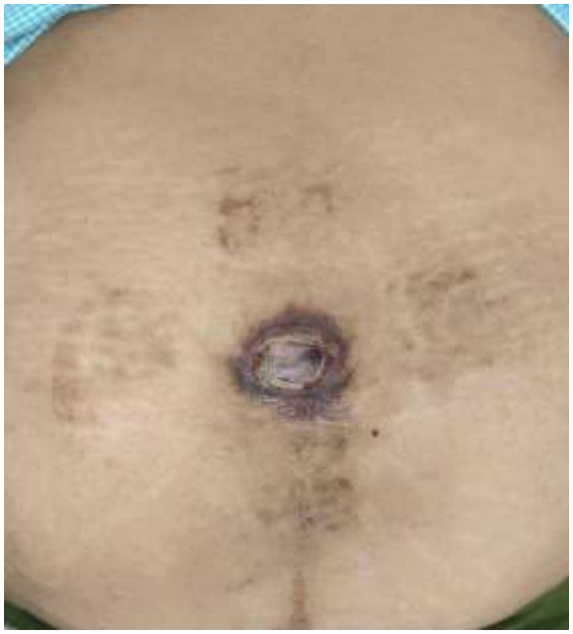

Figure 1: Image shows the pre-operative photo - the hernial defect and exposed mesh

Past Surgical History

- Lower segment cesarean section
- Open appendicectomy
- Exploratory laparotomy with adhesiolysis
- Open ventral hernia repair with synthetic mesh
- Two subsequent wound dehiscence repairs with secondary suturing and recurred with superficial mesh exposure

Pre-operative imaging suggested incarcerated omentum with a possibility of entero-mesh fistula.

Intra-operative Findings

Diagnostic laparoscopy followed by open exploration revealed:

- Dense adhesions of small bowel and omentum to the abdominal wall and mesh
- Inter-bowel adhesions
- Mesh eroding into an approximately 10 cm mid-ileal segment
- No free perforation or generalized peritonitis

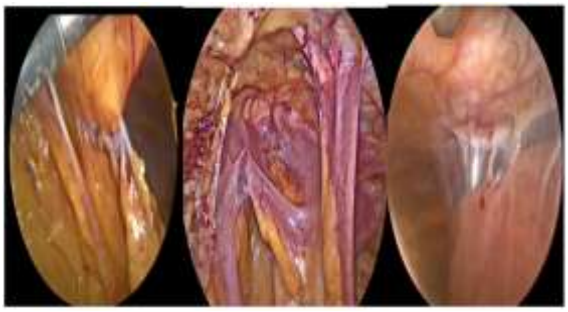

Figure 2a-c: Image shows the intra operative dense adhesions of intestine to the abdominal wall and previous mesh

Procedure Done

Conversion to precise open midline laparotomy was performed. Adhesiolysis was achieved using hydro-dissection and sharp dissection. Partial mesh excision was done, preserving non-eroded segments and resection and anastomosis of involved bowel segment. The umbilical defect was repaired anatomically using continuous non-absorbable polypropylene 1-0 sutures.

Post-operative Course and Follow-up

Recovery was uneventful. The patient was discharged on postoperative day 5 on oral diet. At 2-month follow-up, she remained asymptomatic with no recurrence, normal bowel function, and a well-healed umbilicus and laparotomy wound.

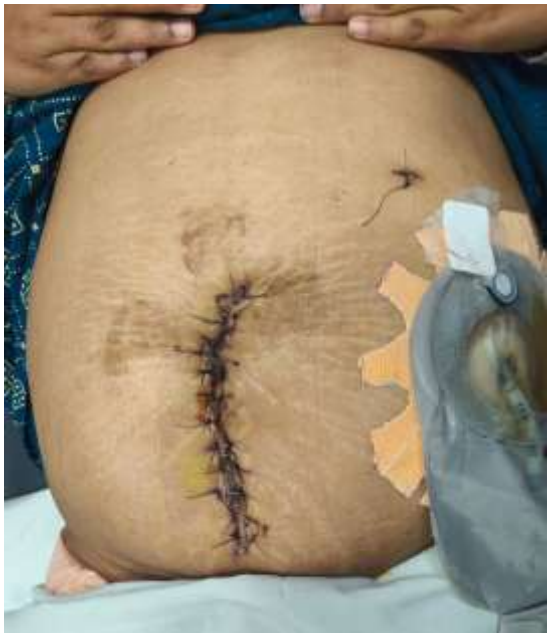

Figure 3: Image shows postoperative wound picture. Midline Laparotomy incision and port incision at Palmer's point

DISCUSSION

Mesh erosion into the bowel after ventral hernia repair is an uncommon but potentially life-threatening complication.[1,3] This case highlights the technical complexity encountered in multiply operated abdomens and need for meticulous surgical techniques. A hybrid approach beginning with diagnostic laparoscopy allows safe evaluation before definitive open repair.[7,8]

Port placement at Palmer's point or the left upper quadrant using 5–10 mm trocars minimizes the risk of inadvertent bowel injury in hostile abdomens.[8]

A 30° laparoscope helps map adhesions, assess erosion extent, and evaluate bowel viability before selecting a safe open entry site. Subsequent conversion to midline laparotomy through the previous scar allows controlled adhesiolysis, often aided by wet gauze counter-traction.

Laparoscopy has been shown to reduce iatrogenic bowel injury rates by nearly 50% compared with blind open entry in re-operative fields.[7,9] During adhesiolysis, maintaining a margin of at least 2 cm from the eroded segment and employing a gentle

ISSN (O): 2687-5365; ISSN (P): 2753-6556

"push–peel" maneuver for densely adherent bowel are recommended technical principles.[5]

Intra-operative air insufflation under saline can help test bowel integrity.

Post-operative strategies include early nasogastric decompression for ileus, electrolyte replacement and parenteral protein supplementation.

Hybrid laparoscopic-open approaches in complex ventral hernias have demonstrated reduced recurrence rates of approximately 5–10% at one year while preserving bowel length and minimizing morbidity.[7,10,11] This technique is particularly advantageous in patients with prior surgeries, dense adhesions, and localized mesh erosion where complete mesh explantation may not be feasible.

CONCLUSION

Erosion of mesh into the bowel is a rare serious postoperative complication of ventral hernia repair, especially in patients with multiple previous surgical procedures performed for various reasons. A hybrid laparoscopic-open approach for safer entry, precise assessment of adhesions, bowel integrity, and management of the mesh, with avoidance of iatrogenic bowel damage, can lead to good outcomes with low rates of recurrence and preservation of bowel length and avoidance of Large Laparotomy incisions.

Acknowledgements: The authors express their sincere thanks to the entire surgical team, hospital, and hospital staff for their support in providing care. Written informed consent was obtained from the patient for publication.

Conflict of Interest: None

REFERENCES

1. Hawn MT, Snyder CW, Graham LA, Gray SH, Finan KR, Vick CC. Impact of mesh use on morbidity following ventral hernia repair with bowel resection. JAMA Surg. 2013;148(3):259-263.
2. Agrawal A, Avill R. Mesh erosion into urinary bladder following laparoscopic inguinal hernia repair. J Minim Access Surg. 2017;13(3):238-240.
3. Leber GE, Garb JL, Alexander AI, Reed WP. Long-term complications associated with prosthetic repair of incisional hernias. Arch Surg. 1998;133(4):378-382.
4. Shah BC, Goede MR, Bayer R, Buettner S, Putney S, McBride CL. Delayed mesh erosion into the bowel after ventral hernia repair: a case report and review of literature. Int J Surg Case Rep. 2013;4(2):178-180.
5. Eriksen JR, Poornoroozy P, Jørgensen LN, Jacobsen B, Friis-Andersen HU, Rosenberg J. Pain, quality of life and recurrence after laparoscopic ventral hernia repair. Hernia. 2009;13(1):13-21.
6. Petro CC, Rosen MJ. Ventral Hernia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023.
7. Köckerling F, Simon T. Laparoscopic versus open ventral hernia repair: a systematic review and meta-analysis of randomized controlled trials. Hernia. 2018;22(3):473-486.
8. Carbajo MA, Martín del Olmo JC, Blanco JI, et al. Laparoscopic approach to incisional hernia. Surgical technique and initial results. Surg Endosc. 1999;13(3):250-252.
9. Itani KMF, Hur K, Kim LT, et al. Comparison of laparoscopic and open repair with mesh for the treatment of ventral incisional hernia. Arch Surg. 2010;145(4):322-328.
10. Holihan JL, Nguyen DH, Nguyen MT, Mo J, Kao LS, Liang MK. Mesh location in open ventral hernia repair: a systematic review and network meta-analysis. World J Surg. 2016;40(1):89-99.
11. Atema JJ, Furnée EJ, Maeda Y, Warusavitarne J, Tanis PJ. Major complex abdominal wall repair in contaminated fields: a systematic review of the literature. World J Surg. 2015;39(1):48-58.

ISSN (O): 2687-5365; ISSN (P): 2753-6556