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Closed loop obstruction and adhesive intestinal obstruction in perineal hernia

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SUMMARY

Perineal hernia with bowel gangrene is uncommon but known complication of laparoscopic extralevator abdominoperineal excision (ELAPE). We present a rare case of closed loop small bowel obstruction with bowel gangrene secondary to an incarcerated perineal hernia that developed 7 years after an ELAPE. Intraoperatively, we found a definitive transition point due to adhesions in pelvis and a closed loop obstruction of the distal small bowel at different site with gangrenous intestine. She was managed successfully surgically with adhesiolysis and fixation of defect with biological mesh. Prevalence of perineal hernias will rise in future because of the increasing cases of ELAPE, in which no repair of pelvic floor is performed. The need of follow-up of these operations and more reporting of such cases are important in increasing awareness of these complications. Patients should be made aware of such complications and should seek urgent medical care.

BACKGROUND

Secondary perineal hernia is rare and seen in 1%–26% of patients undergoing extralevator abdominoperineal excision (ELAPE).¹ We report an even rarer case of closed loop small bowel obstruction with bowel gangrene secondary an incarcerated perineal hernia that developed 7 years after an laparoscopic ELAPE.

CASE PRESENTATION

An 84-year-old woman presented to our emergency department with a 1-day history of generalised abdominal pain and vomiting. She had a history of ELAPE and colostomy formation for low rectal cancer 7 years prior. On presentation, she had had no stoma output for 2 days. Examination revealed a soft, non-tender, non-distended abdomen with a left-sided stoma, large reducible parastomal hernia and a perineal bulge of 15×6 cm with erythematous skin and surrounding oedema. Her hernia had been present for 7 years and she had not mentioned this to any healthcare professional since its appearance following her surgery.

INVESTIGATIONS

Blood tests on admission, besides a raised neutrophil count of $8.5 \times 10^9/L$ and C reactive protein of 17, were normal. A CT scan revealed small bowel obstruction with herniation of bowel into the perineum with a probable transition point in the pelvis (figures 1–3).

TREATMENT

Intraoperatively, extensive adhesions were found and two significant pathologies. The first was adhesive intestinal obstruction at a definitive transition point in the pelvis with a large pelvic serous collection. The second, a closed loop obstruction of the distal small bowel with 20 cm of gangrenous of intestine. Adhesions were released and resection and anastomosis of small bowel performed. To prevent recurrence, internal fixation with biological acellular porcine matrix was chosen. The pelvic dead space was managed with a drain tube.

OUTCOME AND FOLLOW-UP

Post surgery, her recovery was slow, requiring parenteral nutrition, but uneventful and was discharged on the 22nd postoperative day. She was followed up 42 days after discharge and was found to be well. She had healthy functioning stoma, healed surgical wounds and no recurrence of hernia.

DISCUSSION

Perineal hernias are rare and are often poorly reported by patients. The incidence varies from 1% to 26%¹; however, complicated perineal hernias are very unusual and are seldom documented in literature. A search on the National Institute for Health and Care Excellence (NICE) advanced healthcare database using the keywords ‘perineal hernia’ AND ‘bowel gangrene’ produced no related articles. In the literature, only three cases of perineal hernia with bowel gangrene could be identified.²

Perineal hernias usually appear between 6 months and 5 years after surgery and are associated with risk factors such as smoking, chemotherapy, radiotherapy, long mesentery, injury to levator ani and the presence or absence of coccygectomy.^{2–3} These are classified as congenital or acquired. Congenital variant is extremely unusual and till date only nine cases have been documented.⁴ Acquired hernias are further subclassified as primary and secondary. Primary hernias are common in older multiparous women or those patient with long-term ascites or constipation resulting in increased abdominal pressure.⁵ Pelvic floor and urogenital diaphragm play a vital role in supporting pelvic organs and viscera. Pelvic floor neurogenic atrophy may cause primary perineal hernias.⁶ Secondary perineal hernias are commoner and develop after pelvic operations such as ELAPE, pelvic exenteration or hysterectomy. Injury or denervation of levator ani, iliococcygeus, pubococcygeus muscle leads to these incisional perineal hernias. Hence, preserving pelvic floor nerve supply by meticulous dissection during these



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Figure 1 Coronal CT image suggestive of small bowel distension.

operations shall reduce its incidence. Use of a biological mesh during an index ELAPE surgery shall strengthen pelvic floor and reduce occurrence of secondary perineal hernia.

These hernias are typically managed conservatively but should be repaired if associated with symptoms such as skin erosion, redness or obstruction. Whether repair should be performed as elective surgery is still an open debate, as there are few cases reported in the literature with such complications.

Although surgical repair provides a challenge, it is often necessary to prevent patient morbidity. Various approaches have been described; open transabdominal or transperineal to laparoscopic approaches, with the latter two currently the most commonly practiced.¹³ Re-enforcement of pelvic floor defects using various types of mesh is now routinely practiced and primary closure has been abandoned.¹⁷ Synthetic meshes should not be used in the presence of contamination



Figure 2 Sagittal CT image shows extension of bowel into pelvis with a perineal hernia.



Figure 3 Transverse CT image depicting oedematous bowel in perineum.

from non-viable bowel or bowel contents.³ Reconstruction using myocutaneous flaps is a specialist and time-consuming procedure with an appreciable morbidity, but with a lower recurrence rate; however, it is not appropriate in an emergency.¹ The use of a biological mesh or acellular porcine dermal matrix has the advantage of a low risk of infection when used in a potentially contaminated field.⁷ Combined with an omental pedicle graft to fill the pelvic space, this is the safest option.

In this case, a laparotomy was performed due to the expectation of extensive intraabdominal adhesions and the possibility of bowel gangrene, despite good laparoscopic expertise. Although there is no conclusive evidence to suggest that perineal wound healing after ELAPE for rectal cancer with a biological mesh has lessened hernia recurrence rates,^{5,6} it was preferred in this case as there was a contaminated surgical field. Although there is promising evidence of reduced 1-year perineal hernia recurrence rates following biological mesh closure, longer follow-up is required to determine the clinical significance.^{8,9}

As only three cases of strangulated perineal hernias have been reported, with only two of these having concurrent bowel gangrene, the exact mechanism of occurrence, treatment and preventive measures are yet to be standardised. It is important to choose appropriate surgical intervention based on experience and the patients' clinical condition. Further case studies should be sought to further knowledge on the conditions.

Here, we report one of the rare case of dual pathology; adhesive bowel obstruction with transition point and closed

Learning points

- ▶ It is essential to look for suspicious other findings in Pandora's box when in doubt, even when presenting cause has been revealed with more meticulous dissection.
- ▶ We recommend repair of the pelvic floor using a biological mesh when working in a contaminated field to lower the risk of infection associated with synthetic meshes.
- ▶ It is important that, asymptomatic patients after extralevator abdominoperineal excision surgery with perineal bulge should be aware of such complications and should seek urgent medical care if concerned.

loop bowel gangrene in the perineal hernia after ELAPE for low rectal cancer.

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