Perineal and Paraostomal Hernias After Abdominoperineal Resection: A Sequential Surgical Approach

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INTRODUCTION

Abdominoperineal resection (APR), also known as the Miles procedure, remains the treatment of choice for anal cancer refractory to or recurring after chemoradiotherapy and for low rectal cancer not amenable to sphincter-preserving approaches. Although potentially curative, APR is associated with substantial morbidity.

Incisional hernias are common after abdominal surgery; however, perineal and paracolostomy hernias following APR represent particularly complex and technically demanding entities.

Perineal hernia is an uncommon but likely underdiagnosed complication, with reported incidence ranging from 0.6% to 26%.[1] It occurs more frequently after extralevator resection and in patients who have received neoadjuvant therapy. Recognized risk factors include female sex, likely related to pelvic bony anatomy, obesity, smoking, surgical site infection, and prior hysterectomy. Clinically, presentation ranges from asymptomatic perineal bulging to chronic pain, skin ulceration, bowel obstruction, or, as in the present case, severe impairment of ambulation and ability to sit.[2]

No consensus exists regarding the optimal repair technique for perineal hernia. Surgical options include open or laparoscopic abdominal, perineal, and combined approaches.[3,4] The laparoscopic approach offers the benefits of minimally invasive surgery and excellent visualization of the deep pelvis; however, it may be insufficient to ensure secure distal closure in large defects. In such cases, a perineal approach may provide more reliable anchorage and facilitate muscular reconstruction.

Paracolostomy hernia is the most common complication of permanent stomas, with long-term rates exceeding 50%.[5] Its repair remains challenging due to high recurrence rates and the inherent risk of contamination.

We report a technically complex case of concomitant perineal and paracolostomy hernias following APR, managed with a staged sequential strategy. The first stage consisted of combined laparoscopic and perineal repair of the perineal nia, followed by laparoscopic repair of the paracolostomy hernia at a second operation.

DESCRIPTION

A 69-year-old woman with a history of obesity, laparoscopic myomectomy, laparoscopic appendectomy, and anal cancer treated with APR was evaluated.

One month after oncologic surgery, she developed signs of perineal sepsis (malodor, purulent discharge, fever). Imaging revealed a perineal collection that drained spontaneously. Digital examination confirmed the integrity of the posterior vaginal wall. The infection resolved with medical management; however, the resulting cicatricial defect predisposed to pelvic floor weakness.

Five years postoperatively, surveillance computed tomography demonstrated an asymptomatic paracolostomy hernia containing transverse colon and omentum (Fig. 1). In addition, a giant symptomatic perineal hernia was identified, associated with visible bulging, discomfort, and inability to ambulate (Fig. 2).

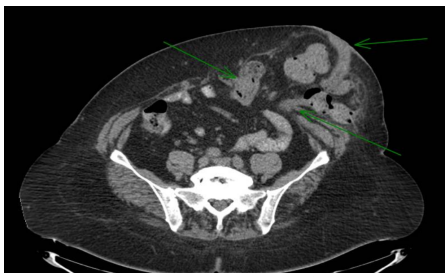

Figure 1. *Axial computed tomography of the abdomen demonstrating a paracolostomy hernia*

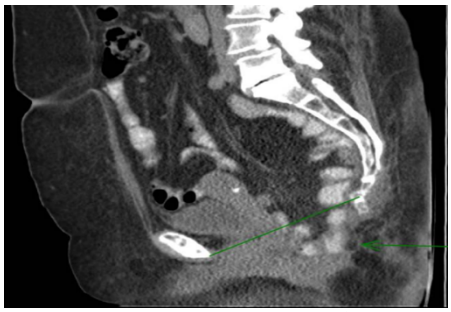

Figure 2. *Sagittal computed tomography of the abdomen demonstrating a perineal hernia.*

Given the severe functional limitation, priority was given to perineal hernia repair. Considering the patient's risk factors and defect size, a staged strategy with double-mesh reinforcement was planned in two independent procedures, addressing the perineal hernia first and the paracolostomy hernia subsequently.

For the initial operation, a combined abdominal and perineal double-mesh approach was med. During the

laparoscopic phase, extensive adhesiolysis was completed, and hernia sac contents were reduced. A 20 × 30 cm composite mesh was placed, fixed to Cooper's ligament and the sacral promontory, and reinforced with a continuous nonabsorbable suture to close the pelvic outlet.

The perineal phase was performed with the patient in the prone jackknife position. The perineal scar was excised, a second mesh was positioned over the sacrum and muscular planes, and bilateral gluteal advancement flaps were fashioned to achieve soft tissue coverage.

The postoperative course was uneventful.

One year later (6 years after APR), the now symptomatic paracolostomy hernia was repaired laparoscopically. After reduction of colon and omentum, the fascial defect was closed with percutaneous nonabsorbable sutures using a Reverdin needle. A 30 × 20 cm intraperitoneal composite mesh was then placed and secured with tacks, following principles similar to the Sugarbaker technique (Fig. 3).

The patient was discharged on postoperative day 3. At 7 years of follow-up, she remains asymptomatic, with no clinical or radiologic evidence of recurrence.

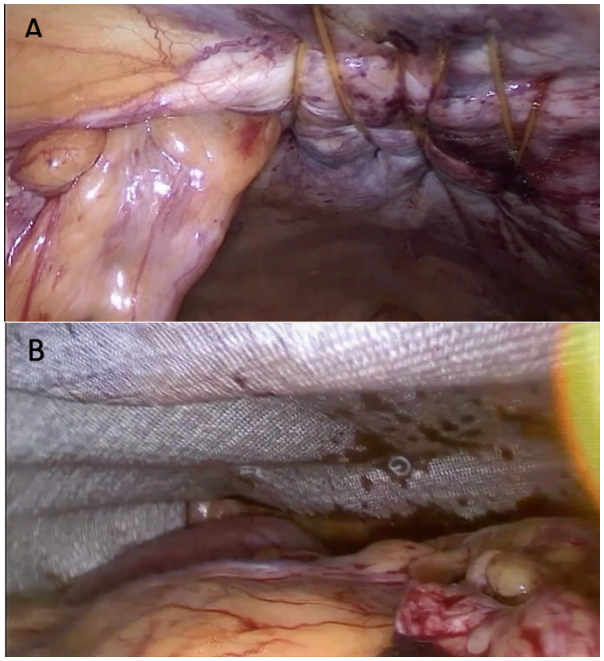

***Figure 3**. Laparoscopic view of paracolostomy defect closure with percutaneous sutures before mesh placement **(A)** and after mesh placement **(B)**.*

DISCUSSION

Management of late post-APR hernias presents significant technical challenges. In this case, the coexistence of obesity, a large pelvic defect, and paracolostomy hernia conferred a particularly high risk of repair failure.

An initial laparoscopic approach allows safe adhesiolysis in the deep pelvis, where access from the perineum alone may be limited, thereby reducing the risk of enterotomy.[2] However, secure distal fixation in the deep pelvis can be technically demanding laparoscopically. The addition of a perineal phase ensured robust distal closure and muscular reconstruction, particularly important in obese patients with elevated intra-abdominal pressure.

The use of double-mesh reinforcement provides enhanced mechanical support and has been associated with lower recurrence rates compared with primary closure or single-mesh repair.[3]

Paracolostomy hernia repair was performed according to principles similar to the Sugarbaker technique to reduce the risk of recurrence.[5,6]

CONCLUSIONS

This case highlights the need for an aggressive, multifactorial surgical approach in complex post-APR hernias. Double-mesh repair of the perineal defect, combined with staged management of the paracolostomy hernia, resulted in a durable repair and substantial improvement in the patient's quality of life.

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