CASE REPORT

A novel technique for perineal hernia repair

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SUMMARY

Perineal hernia is an uncommon complication of abdominoperineal resection of the rectum. Gracilis muscle flaps can be used to reconstruct the pelvic floor. The traditional repair utilises gracilis muscle alone, without overlying tissues and skin. We present the case of a 69-year-old white man who presented with a perineal hernia subsequent to abdominoperineal resection for advanced rectal cancer who was successfully treated with a modified de-epithelialised gracilis myocutaneous flap with no evidence of recurrence at 18 months postsurgery. Surgical repair of postoperative perineal hernia using a gracilis flap spares the morbidity of abdominal-based reconstruction and provides a good option for patients in whom the abdomen is unavailable. Use of a myocutaneous flap adds strength to the repair when compared to reconstruction with the gracilis muscle alone, owing to the strength imparted by the dermis.

BACKGROUND

Postoperative perineal hernia is a challenging surgical problem with a high recurrence rate following treatment. Operative repair is difficult owing to the confined space of the pelvis, the need to reduce and control the bowel, and the difficulty of achieving adequate fixation of a mesh. Various repair techniques have been described, including primary suture repair, placement of synthetic or biological mesh and repair with autogenous tissue. Here, we describe a modification of the gracilis flap for reconstruction of the perineal floor. Use of a myocutaneous flap overcomes the problem of denervation atrophy of the muscle, as the dermis maintains its strength over the long term.

CASE PRESENTATION

A 69-year-old white man underwent abdominoperineal resection and radiation to the perineum for advanced rectal cancer in 2009. He presented to his gastrointestinal surgeon in early 2011 with a midline perineal bulge and complaints of discomfort when sitting. Physical examination of the perineal region revealed the presence of a well-healed scar as well as a large, easily reducible hernia measuring approximately 10 cm × 6 cm at the site of his perineal incision (figure 1). No drainage, irritation or evidence of radiation damage was observed.

INVESTIGATIONS

A CT scan showed protrusion of small bowel and colon through the hernia defect (figure 2). No evidence of cancer recurrence was observed.

Figure 1 External view of perineal hernia.

TREATMENT

Following delay of bilateral gracilis flaps, the patient was taken to the operating room for repair of the perineal hernia. The gracilis muscle along with a skin paddle was harvested and de-epithelialised using the Versajet Hydrosurgery System (figure 3). This was then secured to the coccyx using 0 Maxon sutures through holes drilled into the coccygeal bone, completely obliterating the defect. The repair was reinforced by means of a Strattice mesh, which was also secured using 0 Maxon sutures.

OUTCOME AND FOLLOW-UP

The patient did well postoperatively. He recuperated at a rehabilitation facility on a Clinitron bed. A small seroma measuring 2 cm × 2 cm was incised, drained and packed in clinic. The wound healed, and he is doing well 18 months postsurgery with no evidence of recurrence.

DISCUSSION

Perineal hernia is an uncommon complication of abdominoperineal resection of the rectum.

Figure 2 Coronal CT image showing protrusion of colon through hernia defect.

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Figure 3 Intraoperative image of de-epithelialised gracilis flap being inset into hernia defect.

Prevalence estimates range from 0.34% to 7%.¹ Factors associated with increased risk of postoperative perineal hernia include female gender, perioperative radiation, perineal wound infection and extensive resection of the levator muscles.² Various surgical repair techniques have been utilised for the management of postoperative perineal hernias, with reported rates of recurrence approaching 40%.¹ The approach can be abdominal, perineal or combined, and abdominal-based procedures can be performed either open or laparoscopically. Repair techniques include primary suture repair, placement of a synthetic or biological mesh and repair with autogenous tissue.

Few large case series have been reported in the literature, making it difficult to establish the superiority of a particular type of repair or estimate the rate of complications associated with the various repair techniques. However, in a retrospective review of 29 patients who underwent repair of symptomatic perineal hernias following abdominoperineal resection for rectal cancer, Martijnse *et al*³ reported good results using high-tension repair with non-absorbable mesh. Urinary retention, wound infection, seroma and fistula were complications that were encountered in patients treated with a variety of techniques during the study period. Mjoli *et al*² observed a lower rate of perineal hernia recurrence following mesh repair (20%) compared to primary suture repair (50%) in a recent pooled analysis of 43 patients.

Though autogenous tissue reconstruction carries with it the additional morbidity of a donor site, autogenous repair is an attractive option in patients with irradiated tissue, recurrent hernia or an infected surgical site. Greater omentum, tensor fascia lata muscle, rectus abdominis muscle, gluteus muscle and

gracilis muscle have all been utilised to reconstruct the pelvic floor. Use of a gracilis muscle flap for repair of a postoperative perineal hernia was first described by Bell *et al*.⁴ The traditional repair utilises gracilis muscle alone, without overlying tissues and skin.^{5 6} The problem with this approach is that denervation atrophy of the muscle leads to loss of strength of the repair. Use of a myocutaneous flap adds strength to the repair when compared to reconstruction with the gracilis muscle alone, as the dermis provides a resilient natural barrier that maintains its strength over the long term.

Surgical repair of postoperative perineal hernia using a gracilis flap spares the morbidity of abdominal-based reconstruction and provides a good option for patients in whom the abdomen is unavailable. The delay procedure improves flap vascularity. The Versajet Hydrosurgery System is a means of quickly and easily de-epithelialising the flaps for use in reconstruction of the perineum.

Learning points

- Use of a gracilis flap for perineal hernia repair spares the morbidity of abdominal-based reconstruction.
- The presence of the dermis enables the myocutaneous flap to maintain its strength over the long term, adding strength and longevity to the repair.
- The Versajet Hydrosurgery System can be used to quickly and easily de-epithelialise the flap.

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Competing interests None.

Patient consent Obtained.

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