CASE REPORT

Laparoscopic fascial suture repair of parastomal hernia

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SUMMARY

Parastomal hernia is a recognised complication following stoma formation, representing a challenging problem to surgeons. At least three approaches for parastomal hernia repair have been described: fascial suture repair, relocation of stoma and local repair with use of mesh. In simple fascial suture repair only open techniques have been described. Relocation of stoma can be complicated with another parastomal hernia at the new site and risk of incisional hernia at the site of previous stoma. Mesh repair can be either open or laparoscopic. The recurrence rate and complications of parastomal hernia repair remain very high. We have invented a simple fascial suture laparoscopic repair of parastomal hernia with the use of the Crochet hook needle (EndoClose). This new technique may result in reduced pain, earlier discharge from hospital and reduced risk of infection as there is no mesh used as well as reduced risk of seroma formation.

BACKGROUND

The Sugarbaker technique for open repair of parastomal hernia¹⁻³ was described in 1980.⁴ This is an intraperitoneal parastomal hernia repair where the bowel is lateralised and covered with mesh. The first laparoscopic parastomal hernia repair was reported in 1998 by Porcheron *et al*⁵ where the orifice of the hernia was closed with stitches and reinforced with mesh. Research of recent papers into laparoscopic parastomal hernia repair shows that the technique is still evolving with mixed results. Laparoscopic mesh repair can be carried out by making a hole or slit in the mesh which then surrounds the intraperitoneal part of the stoma and the mesh is secured.¹ The other laparoscopic technique is as described by Sugarbaker for open repair in which no slit is made in the mesh but the bowel is lateralised and covered with mesh.

Muysoms *et al*⁶ do not favour a cut mesh technique because of a high rate of recurrence but would recommend a modified Sugarbaker technique with good results. Hanson *et al*⁷ found a high rate of recurrence using the cut mesh technique with currently available meshes and advised a newer mesh to be awaited with a less pliable central part. In one study, Dieter *et al* used two different meshes to repair parastomal hernias in 66 patients with a recurrence rate of 12%.⁸

CASE PRESENTATION

A 76-year-old man was admitted for elective laparoscopic proctectomy and repair of parastomal hernia. He had a background of emergency subtotal colectomy for toxic megacolon and ulcerative

colitis. He developed an uncomfortable hernia around his end ileostomy site.

INVESTIGATIONS

After successful laparoscopic proctectomy he was found to have a type 1 parastomal hernia with a defect of approximately 8 cm.

TREATMENT

A new laparoscopic fascial suture repair with non-absorbable suture (5 Ethibond Excel Polyester) was performed. One 10 mm port at the umbilicus held the laparoscope and only one further 5 mm port was required in the left flank for the laparoscopic grasper. A 2 mm stab incision was made in the skin, adjacent to the end ileostomy, and the crochet hook needle (Endo Close by Auto Suture, product reference 173 022) was passed through this (with the stitch engaged) under vision. The suture was released from the end of the crochet hook and held in the peritoneal cavity by a laparoscopic grasper (figure 1). The crochet hook was then withdrawn above the fascia but still within the original skin puncture site and then reinserted through the fascia

Figure 1 Parastomal hernia defect with Crochet hook and suture in the peritoneal cavity. Photograph showing end result.

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on the other side of the hernia defect. The crochet hook then engaged the suture again and was withdrawn ensuring that the suture had straddled the hernia defect. The suture was brought out through the same stab wound on the abdominal wall and tied. Two interrupted sutures were enough to close the defect. Therefore, only two small stab incisions on the skin were required, which were easily sealed with skin glue. Unlike the other previously described laparoscopic techniques, our laparoscopic technique ensures a full thickness fascial suture repair.

OUTCOME AND FOLLOW-UP

The patient was discharged home on the second postoperative day and was seen in the outpatient clinic 3 weeks later and there were no signs of early complications with the stoma working well.

DISCUSSION

Athens and PubMed were searched for descriptions of parastomal hernia repair. Sixty-nine articles were found and duplicated descriptions were excluded. A total of 39 papers were left. None of these papers described a laparoscopic simple fascial suture repair with Crochet hook needle. Recent papers in the last 3 years report good results with laparoscopic repair,^{9–12} as compared with the papers written over 3 years ago.¹³ The literature tells us that parastomal hernia affects approximately 5–50% of all patients after stoma formation and is most commonly seen in end colostomies.¹⁴ Complications of parastomal hernia range from mild pain to obstruction and perforation. Not all parastomal hernias become symptomatic and not all of them require corrective surgery. About 20% of all parastomal hernias lead to surgical correction.

The best surgical approach for parastomal hernia remains controversial. One way to treat such hernias is by restoring bowel continuity but this is not always possible, especially in patients with end stomas. Many surgical techniques have been described but the results are variable. The traditional open techniques are suturing of the fascial defect, stoma relocation or repair with a prosthetic mesh either intraperitoneally or extraperitoneally.¹⁵ Overall, the results of all the three techniques are not ideal, with increased recurrence and high morbidity and mortality. Mesh repairs have the lowest reported recurrence rates (0–39%). Simple suture repair has a reported recurrence rate of 46–76% and stomal relocation of 0–50%.¹⁶

In our case the hernial defect was of moderate size, which made simple fascial suture repair possible. We recommend this new laparoscopic type of repair for small-sized to moderate-sized parastomal hernia defects.

Contributors KZ and DM wrote the initial draft of the case report. KZ was the main surgeon involved during the surgery. EM was the consultant responsible for overall care of the patient during surgery. All the authors edited the drafts and approved the final manuscript.

Competing interests None.

Patient consent Obtained.

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Learning points

- Despite no formal technique described in the literature, knowledge of the problem and the anatomy allowed for a new technique to be performed safely.
- In controversial situations, such as the best treatment for parastomal hernias, performing a new (or hybrid) technique may be of the most benefit for the patient.
- When using a laparoscopic technique, it is of great importance to visualise the rest of the abdomen as a screening process for other, subacute pathology.

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