

CASE REPORT

Laparoscopic correction of right transverse colostomy prolapseGokhan Gundogdu,¹ Ufuk Topuz² & Tarik Umutoglu²¹ Department of Pediatric Surgery, Faculty of Medicine, Bezmialem Vakif University, Istanbul, Turkey² Department of Anesthesiology, Faculty of Medicine, Bezmialem Vakif University, Istanbul, Turkey**Keywords**

Children; colostomy prolapse; laparoscopy

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Abstract

Colostomy prolapse is a frequently seen complication of transverse colostomy. In one child with recurrent stoma prolapse, we performed a loop-to-loop fixation and peritoneal tethering laparoscopically. No prolapse had recurred at follow-up. Laparoscopic repair of transverse colostomy prolapse seems to be a less invasive method than other techniques.

Introduction

Right transverse skin bridge colostomy is often used as a temporary stoma for reducing bowel dilatation in congenital disorders of the colon. The most common complication of transverse colostomies is stoma prolapse, occurring nearly in one-fourth of patients (1,2). Many open surgical or minimally invasive methods have been described for correcting a stoma prolapse. Here, we describe a new laparoscopic method, a combination of two previously defined open surgical methods of transverse colostomy prolapse repair.

Case Presentation

A 14-year-old girl with Down syndrome presented to us with acute abdomen symptoms: abdominal pain, distension, and bilious vomiting. Over-dilated bowel segments with air-fluid levels were demonstrated on her plain graphy. In her history, she had constipation and abdominal distension attacks since birth; the month before she presented at our institution she had had a false appendectomy by open surgery at another institution. We managed her ileus clinic by intestinal decompression and intravenous antibiotics. A subsequent contrast study 1

month after discharge demonstrated a transitional zone at the rectosigmoid area. Rectal biopsy confirmed our suspicion of congenital colonic aganglionosis (Hirschsprung's disease). A standard right transverse skin bridge colostomy was considered for decompressing the dilated colon before the definitive surgery. To prevent stoma prolapse in transverse colostomy procedures, we routinely construct an approximately 3-cm fixed mesenteric plane with separate stitches between the ascending and descending limbs of the stoma. However, distal limb prolapse occurred 1 month after the stoma construction. Button-pxy fixation, in a sandwich formation between button-skin-distal loop-button, was performed twice with the patient under sedation and local anesthesia, but prolapse recurred soon afterwards due to suture dehiscence. Stoma revision was considered because of the previous unsatisfactory attempts to repair the prolapse.

At the time of surgery, three 5-mm trocars were inserted, via the umbilicus, and the right lower and left lower quadrants (Figure 1). During laparoscopy, the attachment deficiency between the whole ascending colon and the posterior abdominal wall was noticed, although previous sutures between the proximal and distal stoma limbs were found intact. The attachment deficiency of the ascending colon and the insufficient

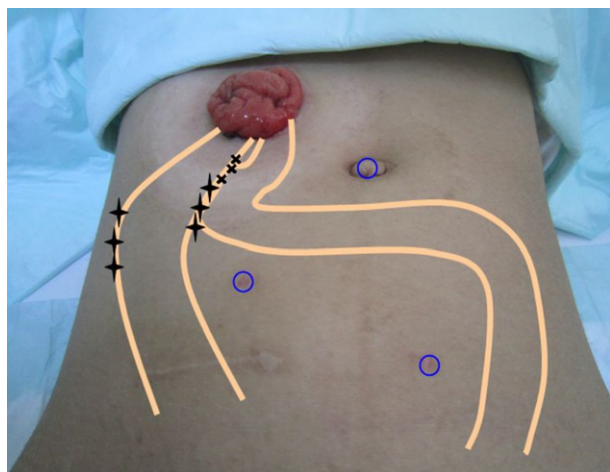


Figure 1 Postoperative illustration of the technique. The previous Rocky-Davis incision can be seen in the right lower quadrant. Trocar sites were through the umbilicus, left lower quadrant, and right lower quadrant (blue circles). The previous three stitches are marked with crosses. New stitches are indicated with stars. The proximal and distal limbs of the colostomy are indicated by the orange lines.

previous fixation of the proximal and distal limbs were thought to be the cause of the prolapse. To construct a longer segment of proximal and distal limb fixation, three new sutures 1 cm apart were affixed between the connected stoma limbs (Figure 1). The ascending colon was also attached to the lateral abdominal wall at its upper middle part by three separate non-absorbable sutures. This fixation created an angle that we believe will help prevent the development of further prolapse (Figure 1). The operative time was 35 min. Oral intake was started the next day and the patient was discharged within 24 hours. Stoma prolapse did not occur until the definitive operation.

Discussion

Stoma prolapse is generally observed at the distal limb of bulky transverse loop colostomy. In most cases prolapse is medically followed up until the stoma closure. However, transverse colostomies could be retained for a long period and prolapses can result in troublesome skin excoriation, bleeding, or ileus development (1). As the stoma is usually constructed on the right side of the transverse colon, it would seem that the distal redundant transverse colon without any attachments is what causes prolapse. Maeda *et al.* defined the pathophysiology of prolapse as starting around the mucocutaneous suture, with the stoma inflated and the distal colon within it depressed (3). Abdominal pressure forces this process, and prolapse becomes more evident. Several techniques can prevent

prolapse development. Law *et al.* advocated creating small distal stomas to prevent prolapse (4), but this is not always applicable in over-dilated colon such as Hirschsprung's disease. Excisional revision of the prolapsed limb is generally preferred in adults (5); however, unnecessary tissue loss is an undesirable condition in children. Button-pxy fixation is another efficacious method, but the recurrence is high in large prolapse stoma, as was experienced in our case (6). The classical surgical approach to manage prolapse is stoma resiting by open surgery (7). However, this method requires longer hospital stays, and peristomal wound infections are more likely to occur. Ng *et al.* proposed peritoneal tethering of the distal limb for preventing prolapse, despite the longer incisions required for the construction and closure of the stoma (8). Anchoring the proximal and the distal stoma limb with separate non-absorbable stitches prevents prolapse development by making a segment of fixed spur (7), a routine procedure in our practice. We surmise that prolapse development in the current patient may have resulted from a relatively short anchored segment and a wide stoma opening caused by an over-dilated colon. In addition, complete fixation deficiency of the total ascending colon may have facilitated prolapse development in this case.

Our method is basically a laparoscopic combination of two open surgical techniques. In this case, we were able to make a long segment of spur between the two limbs of the stoma laparoscopically. We recommend making a spur between the stoma limbs in all transverse colostomies; however, a longer spur may not be required except in prolapse development. In our case, laparoscopically tethering the ascending colon to the posterior abdominal wall created an angle at the distal limb that will provide a more stable stoma to withstand abdominal pressure. This procedure may be crucial in conditions such as fixation deficiencies; however, laparoscopic management may be an alternative to open peritoneal tethering of all kinds of stoma prolapses regardless of the underlying disease.

Our method has advantages over the open approach: decreased hospital stay, decreased need for antibiotics, and reduced risk of local wound infection secondary to stoma re-creation. More procedures using this method are needed to determine its efficacy, but early results from the current case are encouraging for future laparoscopic management of transverse colostomy prolapse.

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