

Revision of a Prolapsed Ileostomy Using a Stapling Technique

Prolabe Olmuş İleostominin Stapler Yardımıyla Revizyonu

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Abstract

Stoma prolapse is one of the late complications of ileostomy and colostomy, with a reported incidence ranging from 2% to 22%. The rate of prolapse is particularly high in loop stomas. Several factors contribute to the development of prolapse, including obesity, conditions associated with increased intra-abdominal pressure, and creation of an excessively wide abdominal wall opening during stoma formation. Stoma complications are generally managed conservatively; however, because these approaches are often not definitive, surgical interventions are frequently required. In this case report, we present a 56-year-old male patient with a loop ileostomy who was admitted for stoma prolapse accompanied by impaired stomal circulation. The prolapsed stoma was successfully revised locally with a linear stapler, obviating the need for laparotomy.

Keywords: Ileostomy, stapler, stoma prolapse, stoma revision

Öz

Stoma prolapsusu, ileostomi ve kolostominin geç dönem komplikasyonlarından biridir. Görülme sıklığı %2-22 oranında bildirilmektedir. Özellikle loop stomalarda prolapsus oranı daha yüksektir. Prolapsus gelişiminde obezite, karın içi basıncı artıran durumlar ve stoma oluşturulurken karın duvarında geniş açıklık bırakılması gibi birçok faktör rol oynamaktadır. Stoma komplikasyonları genelde konservatif olarak yönetilir; fakat bu yöntem kalıcı olmadığı için cerrahi yöntemlere yönelir. Bu olgu sunumunda da loop ileostomisi olan 56 yaşındaki erkek hastada gelişen stoma prolapsusu ve stomada meydana gelen dolaşım bozukluğuyla başvuran hastada laparotomi uygulanmaksızın lineer stapler yardımıyla lokal olarak revizyonu sunulmuştur.

Anahtar Kelimeler: İleostomi, stapler, stoma prolapsusu, stoma revizyonu

Introduction

Several risk factors have been identified for stomal prolapse. The most widely accepted theory suggests that an excessively long and mobile mesentery of the small intestine may lead to intussusception and, consequently, prolapse. In addition, an excessively wide fascial opening at the stoma site and increased

intra-abdominal pressure are considered risk factors for stomal prolapse.

Stomal prolapse is a late complication of ileostomy or colostomy and has been reported to occur in 2-22% of loop stomas (1). Moreover, the overall morbidity rate associated with stomas ranges from 20% to 70%, representing a substantial clinical



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burden (2). Prolapse adversely affects patients' quality of life and may result in peristomal dermatitis, difficulty in fitting stoma appliances, bleeding, stomal discharge, obstruction and, in some cases, strangulation (3-5).

Most stoma-related complications are initially managed conservatively; however, since this approach is often not definitive, surgical intervention is frequently required. Although several surgical techniques and approaches have been described, there is still insufficient evidence to support the superiority of one technique over another.

In this case report, we present the local stapler-assisted treatment of a loop ileostomy prolapse that developed in a patient who had previously undergone low anterior resection for rectal cancer, without the need for laparotomy.

Case Presentation

Written informed consent was obtained from the patient for publication of this case report and the accompanying images. A 56-year-old male patient with no known comorbidities underwent low anterior resection with creation of a protective loop ileostomy for rectal cancer one month prior. Approximately one month after surgery, the patient presented to our clinic with complaints of prolapse of the ileostomy and discoloration of the stoma.

On physical examination, the abdomen was soft, with no guarding or rebound tenderness. Marked prolapse of the intestinal mucosa was observed at the distal limb of the loop ileostomy, and was accompanied by significant edema and impaired circulation in the prolapsed bowel segment (Figure 1). The proximal limb of the ileostomy was normal, with adequate discharge of enteric contents.



Figure 1. Prolapsed loop ileostomy

The patient was taken emergently to the operating room. The procedure was initiated with the patient sedated in the supine position. A gastrointestinal linear stapler was applied to the prolapsed distal limb of the ileostomy (Figure 2). The superior aspect of the prolapsed ileostomy was transected in the sagittal plane at the 12 o'clock position, maintaining a distance of 0.5 cm from the skin (Figure 3).

In the second stage, the stapler was positioned on the inferior aspect of the prolapsed ileostomy at the 6 o'clock position and fired in the sagittal plane, maintaining a distance of 0.5 cm from the skin (Figures 4 and 5). These two staple lines divided the prolapsed ileostomy segment into two parts along the sagittal plane.

In the third step, each segment was resected at its base using a stapler, parallel to and 0.5 cm from the skin (Figures 6 and 7).

Thus, a total of four stapler cartridges were used throughout all steps of the procedure. In the final stage, the entire prolapsed segment was excised, and the circumferential edge of the ileostomy was rematured at a distance of 0.5 cm from the skin (Figure 8).



Figure 2. Placement of the stapler into the ileostomy lumen

The total operative time was 20 minutes, and the patient was discharged uneventfully at 24 hours postoperatively. Follow-up evaluation of the ileostomy was performed 10 days after surgery. The patient's symptoms had resolved, and there was no evidence of stoma prolapse. Adequate passage of gas and stool was observed, and complete wound healing was noted (Figure 9).



Figure 3. Sagittal transection at the 12 o'clock position

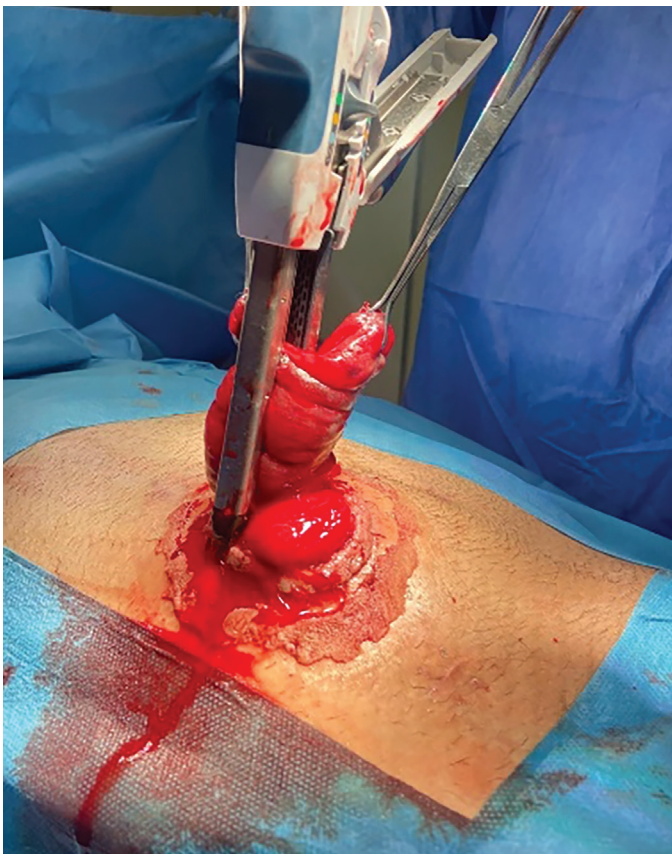


Figure 4. Placement of the linear stapler at the 6 o'clock position

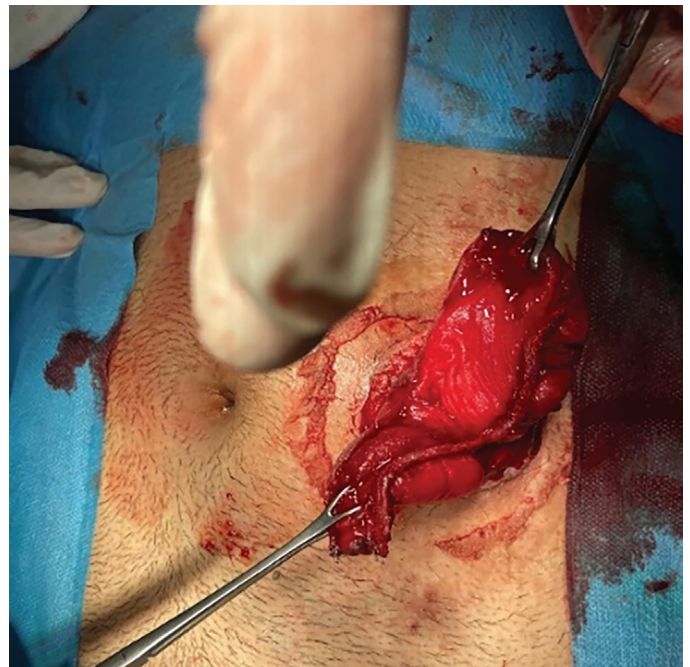


Figure 5. Sagittal transection at the 6 o'clock position

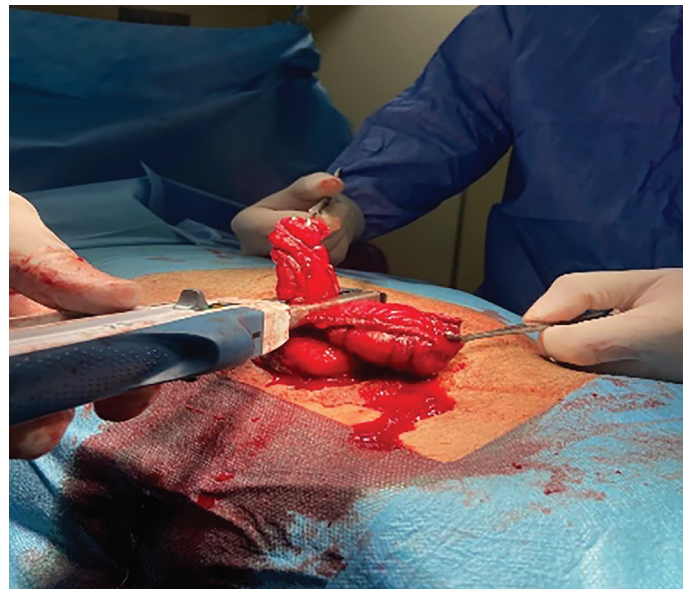


Figure 6. Resection of the superior segment

Discussion

Stoma creation is commonly performed in colorectal surgery, particularly for malignant diseases and inflammatory bowel disorders. Stomas may be temporary or permanent and can be fashioned as ileostomies or colostomies. Stomas are classified according to their configuration as end, Hartmann-type, or loop. Stomal prolapse has been reported to occur more frequently in loop stomas than in end stomas, and it typically involves the distal limb (6,7). In our case, the patient had a loop ileostomy; consistent with the literature, a prolapse developed in the distal segment.



Figure 7. Resection of the inferior segment



Figure 8. Appearance of the ileostomy after revision

Multiple factors have been implicated in the development of stomal prolapse, including obesity, creation of an excessively wide fascial opening during stoma formation, conditions associated with increased intra-abdominal pressure, and the presence of an excessive length of bowel proximal to the stoma (8). It has been reported that failure to suture the mesentery to the peritoneum during stoma creation does not have a significant effect on the development of prolapse, as prolapse is most commonly of the sliding type (9). In our case, no identifiable predisposing factors for stomal prolapse were detected.



Figure 9. Appearance of the ileostomy 10 days after surgery

Various surgical techniques have been described for the revision of stomal prolapse. Resection of the prolapsed segment through the stoma and conversion of a loop colostomy to an end-loop colostomy have long been used as surgical treatment options. However, these techniques are associated with disadvantages such as the need for laparotomy, prolonged hospital stay, wound infections, and in some cases, reoperation. Another commonly used method, button-pxy fixation, is associated with high recurrence rates, particularly in patients with large prolapses (10). Repair of stomal prolapse using a linear stapler was first described by Maeda et al. (11). With the increasing surgical use of stapling devices, case series have reported successful stapler-assisted revisions of loop colostomies, loop ileostomies, and rectal prolapse (1,11,12). In our case, stapler-assisted stoma prolapse revision was performed to avoid complications associated with conventional surgical methods described in the literature. This approach eliminated the need for laparotomy and reduced the risk of prolonged hospitalization and postoperative wound infection, both commonly associated with traditional surgical techniques.

Conclusion

Stapler-assisted stoma revision for patients with stomal prolapse is a technique that allows stoma correction without laparotomy. Compared with conventional surgical approaches for stomal prolapse, this method offers several advantages, including shorter operative time, shorter postoperative hospital stay, and lower risk of postoperative complications.

Ethics

Informed Consent: Written informed consent was obtained from the patient for publication of this case report and the accompanying images.

Footnotes

Authorship Contributions

Concept/Design: İ.A., Data Collection or Processing: İ.Ç., Analysis or Interpretation: S.G., Literature Review: Z.Z., Writing, Reviewing and Editing: Y.K., İ.C.E.

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