Case Report

Perineal Stapled Resection with Linear Staplers for External Rectal Prolapse

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A perineal approach to treating rectal prolapse is an ideal option for older patients who are not suitable candidates for abdominal procedures. There are 2 widely used perineal techniques: the Delorme procedure and the Altemeier procedure. We describe a quick, feasible perineal technique for treating external rectal prolapse. The surgical technique and procedure for external rectal prolapse are presented.
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Key Words
Rectal prolapse;
Linear stapler

Rectal prolapse is classified into external prolapse and internal prolapse. Rectal prolapse is an anatomic abnormality and requires surgical resection. Numerous procedures have been described for the treatment of complete rectal prolapse, and these are classified as perineal or abdominal approaches.[1] Perineal procedures such as the Delorme procedure, Altemeier operation (perineal rectosigmoidectomy), Thiersch procedure (anal encirclement), McCann procedure, Lockhart-Mummery operation, and Wyatt perineal rectopexy are suitable for older and high-risk patients.[2-7] The Delorme and Altemeier procedures are the most commonly used perineal procedures. Recently, internal rectal prolapse has been successfully treated with stapled transanal rectal resection (STARR) using circular staplers.[8] Longo developed the Contour® Transtar™ stapler (STR5G; Ethicon Endo-Surgery, Cin-cinnati, OH) to increase the volume of resected tissue. Then, Roland et al. modified the STARR procedure to resect external rectal prolapse.[11] Tepetes described a local treatment for loop colostomy prolapse using a linear stapling device.[9] Now, we have modified this technique to treat external rectal prolapse using 2 linear staplers.

Case Report

A 90-year-old woman had a 5-year history of troublesome rectal bleeding and a prolapsed anal mass at defecation. The mass had always been reduced manually. She was sent to the emergency room because the mass became painful and irreducible. Rectal examination revealed approximately 8 cm of prolapsed rectum. The protruded rectum was markedly swollen, and congested, and showed signs of superficial mucosal erosion. Manual reduction of the congested rectum in the emergency room failed. The prolapsed rec-

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tum became less congested under epidural anesthesia in the operative room. The prolapsed rectum was transected using a linear stapling device. The procedure was completed within 30 minutes. Oral food intake was started the next day, and stool passage occurred on the second postoperative day. She was discharged on the fourth postoperative day, and no recurrent prolapse was seen at the 1-year follow-up examination.

Operative technique

The patient was operated on under epidural anesthesia, placed in a lithotomy position. The prolapsed rectum was exposed by stay sutures. A vertical incision 1-2 cm in size was made approximately 2 cm above the dentate line, and another on the opposite side. A tunnel was made, with both the inner and outer walls of the prolapsed rectum incised. A Penrose tube was inserted through the tunnel for traction of the prolapsed rectum. A linear stapler (linear cutter TCT75; Ethicon, USA) was inserted through the tunnel (Fig. 1), and the anterior aspect of the prolapsed rectum was divided after firing the stapler. Then, the posterior aspect was divided with the same method, and the prolapsed rectum was transected. Complete hemostasis was achieved with intermittent full-thickness 3-0 chromic sutures (Fig. 2), and the prolapsed rectum was reduced (Fig. 3). The total operative time was less than 30 minutes, and blood loss was minimal. A summary of the technique is illustrated in Fig. 4.

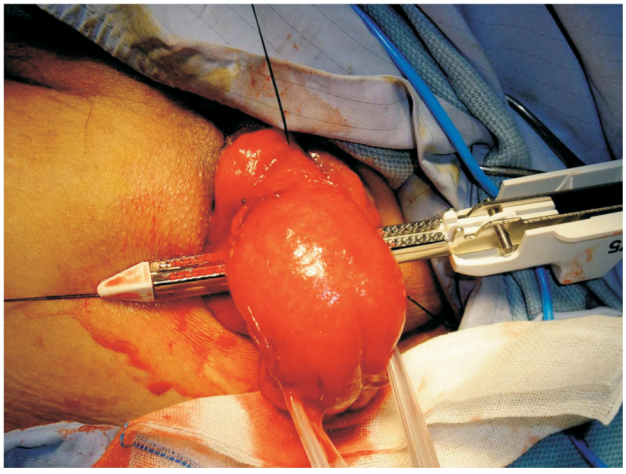

Fig. 1. A GIA 55 was inserted through the tunnel, and divided the anterior aspect of prolapsed rectum after firing the GIA. The posterior aspect was divided with the same method.

Discussion

Delorme's procedure and the Altemeier operation are the most popular perineal techniques for rectal prolapse in patients who are not suitable candidates for abdominal procedures. Both of these techniques are time-consuming, and Delorme's procedure has a high recurrence rate, reaching up to 38%.[1,10] Roland et al. described a new perineal procedure called perineal stapled prolapsed resection (PSP) for external prolapse and showed good functional results.[11,12] The

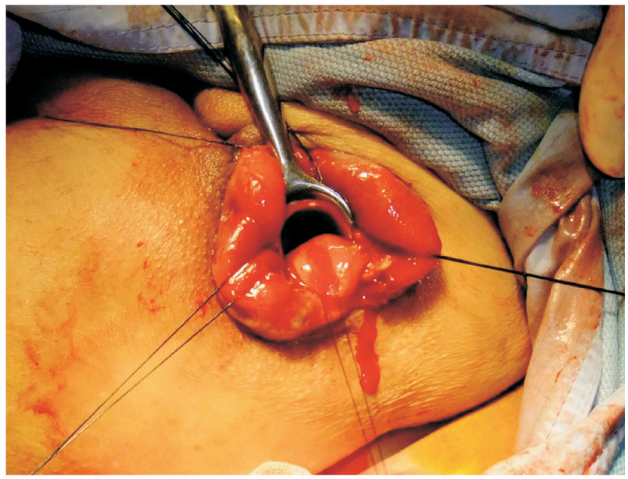

Fig. 2. Intermittent full thickness sutures for hemostasis.

Fig. 3. The rectum was reduced.

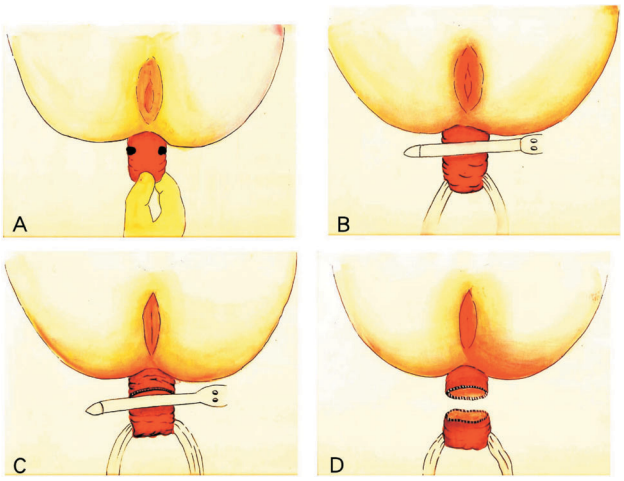

Fig. 4. The summary of technique. A. A vertical incision (black point) 1-2 cm in size was made approximately 2 cm above the dentate line, and another on the opposite side. B. A Penrose tube was inserted through the tunnel for traction of prolapsed rectum. A linear cutter TCT75 was inserted through the tunnel and divided anterior aspect after firing the device. C. Posterior respect was divided with another linear cutter. D. The prolapsed rectum was resected after firing two linear cutters.

main disadvantage of PSP is the high cost of the staplers. We achieved perineal stapled resection with linear staplers for external prolapse at a lower cost than PSP.

In 2008, we introduced a technique using linear staplers for stoma prolapse.[13] Now, we have modified this staple procedure for external rectal prolapse. Compared with PSP, only 2 linear staplers are used in perineal resection, and the technique is easy to perform. Because fewer staplers are used, the cost of perineal stapled resection with linear staplers is lower than that of PSP (9,570 vs. 1,850 NT dollars).[12]

The Altemeier procedure involves opening the peritoneum and pulling down the sigmoid and descending colon, with a greater length of large bowel resected than with the perineal stapled procedure. Johansen et al. reported that the mean length of resected rectosigmoid colon was 23 cm.[14] In this case, the length of the resected large bowel was 10 cm. The influence of the shorter length of resected bowel with the perineal stapled procedure on recurrence rate needs to be assessed using long-term follow-up.

Perineal stapled resection with linear staplers requires a shorter operative time than Delorme's procedure (30 vs. 75 min) or the Altemeier operation.[15] Hetzer et al. showed good functional results and a similar recurrence rate to the Altemeier operation in 32 patients. The median follow-up time was 6 months. There were no intraoperative complications, and the rate of minor postoperative complications was 6.3%. Preoperative severe fecal incontinence disappeared postoperatively in 90% of patients, and no new cases of constipation were noted.[12] Perineal stapled resection with linear staplers uses the same concept as PSP. Therefore, we expect that perineal stapled resection has good results, similar to those seen with the Altemeier operation.

Perineal stapled resection with linear staplers for external rectal prolapse may be associated with less blood loss, a shorter operative time, fewer hospitalization days, and quicker recovery than other perineal procedures. In addition, the procedure is easy to perform and the learning curve is shorter. Functional results and recurrence rate should be investigated using long-term follow-up.

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病例報告

經由會陰部使用線狀切除器治療外部直腸脫垂

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在治療直腸脫垂時，對於年老而不適合腹部手術的病人，經由會陰部進行手術是較可行的方式。在經由會陰部治療直腸脫垂的手術中，Delorme 和 Altemeier 手術是最被廣泛使用的。在這篇文章中，我們描述了另一種快速且可行的經由會陰進行的手術方式。

關鍵詞　直腸脫垂、線型切除器。