Transanal Dilation Using Circular Stapling for Benign Rectal Stenosis: Report of a Case

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Summary: When a simple procedure such as bougie, balloon dilation and transanal incision are not effective for severe stenosis after colorectal anastomotic leakage, a surgical operation is required. We report a case of transanal dilation using circular stapling for severe stricture in the colorectal anastomosis following low anterior resection.

Key words rectal stenosis, transanal dilation, circular stapler

INTRODUCTION

Low anterior resection using a double stapling technique is widely used as a safe and simple surgical technique. However, postoperative anastomotic stricture, its complication with the highest incidence, induces frequent defecation and abdominal fullness, which are difficult to tolerate for patients. It has been reported that colorectal anastomotic stricture after operation for colorectal carcinoma occurred at an incidence of 3-30% [1-12]. In most of these cases of anastomotic stricture, narrowing is simple and shorter than 10 mm and can be successfully treated by transanal dilation or endoscopic alternative. Here, we report a case of transanal resection using a circular stapler for severe cicatricial stenosis at the site of incomplete suture, having a good postoperative progress.

CASE REPORT

The patient was a 62-year-old male who underwent anterior resection based on a diagnosis of rectal cancer in June 1995. At six days after the surgery, ileostomy was performed for anastomotic leakage, and then the patient left the hospital. In July 1996, since anastomotic leakage was improved, the ileostomy was closed. However, the frequency of defecation...
Fig. 2. After the anastomotic stricture was transanally and mechanically dilated using a metal bougie, in the lithotomy position under spinal anesthesia, the posterior wall with fibrous stenosis was dilated using a circular stapler.

Fig. 3. Transanal view after resection showed dilation in the anastomotic stricture.

tion increased after this surgery, so the stricture was transanally incised under spiral anesthesia based on a diagnosis of anastomotic stricture, in August 1999. From May 2000, the patient complained of frequent defecation, feeling of residual stool and lower abdominal fullness again, and was admitted at this hospital for examination.

Barium enema showed severe stenosis (7 mm) at the colorectal anastomosis (Fig. 1). Abdominal CT showed peri-anastomotic thickening, and no swollen lymph node. After the stricture was transanally and mechanically dilated using a metal bougie, in the lithotomy position under spinal anesthesia, posterior wall of fibrous stenosis was resected by a 24-mm caliber circular stapler PCEEA (Tyco Co., USA) (Fig. 2). The transanal view after resection showed dilation of anastomotic stricture (Fig. 3). Good progress was achieved for 29 months to date postoperatively with no recurrent stenosis.

DISCUSSION

The risk for anastomotic stricture is increased after incomplete leakage occurred. Incomplete suture has been reported occurred in 352 of 3,594 patients (9.8%) after mechanical colorectal anastomosis, and 315 (8.8%) had anastomotic stricture, according to the finding from a questionnaire by the American Society of Colorectal Surgeons, by Smith et al. in 1981 [9]. Luchtefeld et al. reported that 82 patients had stenosis after mechanical anastomosis and 41 patients after hand sewn anastomosis, based on a survey of 123 patients with anastomotic stricture after surgery for colorectal carcinoma, in 1989 [4]. Among the 41 patients, 15 had received single-layer suture, and 26 had received two-layer suture. The incidence rate was highest at the rectum (67%), and the second highest rate at the sigmoid colon (22%). The risk factors for anastomotic stricture included obesity (28 patients), abscess (12 patients), sepsis (8 patients), preoperative radiation (5 patients), incomplete suture (15 patients), pelvic infectious disease (13 patients), and postoperative radiation (7 patients). Anastomotic stricture was more frequently found after some interval, than early after surgery, except for postoperative anastomotic edema. Luchtefeld et al. reported stenosis was found at 1-6 months after surgery in 66 (54%) of 123 patients, and at more than 6 months after surgery in 17 patients (14%). Therefore, progress must be carefully observed not only immediately after surgery but also for some time to evaluate anastomotic stricture.

In case of hand sewn small anastomosis, too tight suture leads to incomplete suture, which can cause cicatricial stenosis. Recurrent cancer can cause recurrent stenosis. In the case of mechanical anastomosis, incomplete resection within the stapled doughnut is considered as a cause. Many reports have found that there was no difference between hand sewn and mechanical anastomosis [10]. It has also been reported that intestinal ischemia was related to anastomotic stricture [13].

Brain et al. first reported circular stapling for
stenosis. They transanally resected membranous stenosis within a doughnut-shaped staple-line in the gut lumen after mechanical anastomosis [11]. There are not so many patients with anastomotic stricture requiring reoperation. According to the report of Smith et al., only 14 (4%) of 315 patients with post-operative anastomotic stricture required re-operation. Luchtefeld et al. reported that up to 28% of patients had more severe stenosis incurable by hand, using a bougie, hydrostatic balloon dilation [13-17], or transanal incision [18], and required surgical correction. If such simple procedures are not effective for severe stenosis after incomplete suture, less invasive transanal dilation using the circular staple is necessary.

REFERENCES