

Laparoscopically Assisted Low Anterior Resection for Lower Rectal Endometriosis: Usefulness of Laparoscopic Surgery

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Key Words

Colorectal endometriosis · Lower rectum · Laparoscopically assisted low anterior resection

Abstract

A 34-year-old woman presented with pain during menstruation and was diagnosed with endometriosis of the lower rectum. Despite treatment with an LH-RH agonist, she was unable to become pregnant and surgical removal of her endometriosis was recommended. Preoperative magnetic resonance imaging revealed endometriosis localized between the neck of the uterus and rectum with indentation and scuffing. Laparoscopically assisted low anterior resection was performed. Exfoliation was started from the right side of the rectum to the presacral and retrorectal space, and the rectococcygeus ligament was transected. Exfoliation of the retrorectal space was continued to the levator ani muscle and mobilization of the right side of the rectum was performed. In front of the rectum, exfoliation was started posterior to the wall of the vagina, but layers became unclear near the tumor as the tissue was solid in this region. The left hypogastric nerve close to the tumor was inflamed and it was cut. The layer of the exfoliation was connected to the right side of the rectum, the tumor was isolated from the vagina, and the lower rectum was transected at a point 1 cm distal to the tumor with a 60-mm linear stapler. Reconstruction with a 31-mm circular stapler was performed using the double stapling technique. Operative time was 520 min with a blood loss of 320 ml. On the 9th post operative day, a rectovaginal fistula occurred, and ileostomy was performed. The patient was discharged from the hospital on the 25th postoperative day, and 4 months later, stoma closure was performed.

Introduction

Bowel endometriosis occurs in approximately 10% of all patients with endometriosis [1] and usually arises from the rectum and sigmoid colon at a rate of approximately 80% [2]. Conservative treatment with hormonal therapy is usually performed. However, if the patient hopes to become pregnant, an alternative to long-term hormonal therapy must be found. We report a case of lower rectal endometriosis performed using laparoscopically assisted low anterior resection of the lower rectum. The utility of the laparoscopic approach for rectal endometriosis is emphasized.

Case Report

A 34-year-old woman presented with pain during menstruation and was diagnosed with endometriosis of the lower rectum. Despite treatment with an LH-RH agonist, she was unable to become pregnant and surgical removal of her endometriosis was recommended. On admission, the tumor was not palpable in the abdomen. Tumor markers such as CEA, CA-125 and CA-19-9 were 1.7 ng/ml, 31.9 U/ml and <2.0 U/ml, respectively. On lower gastrointestinal series, poor extensibility of the lower rectum with irregular elevation and mucosal irregularity was observed. The portion of the rectum involved with endometriosis was approximately 35 mm from the anal verge (fig. 1). Colonoscopic findings showed tumor-like submucosal tumor in the anterior wall of the lower rectum (fig. 2). Abdominal computed tomography findings revealed a 2-cm mass without contrast enhancement in the lower rectum. Concerning abdominal magnetic resonance imaging (MRI), a mass which was slightly enhanced and demonstrated mass effect on the surrounding organs was shown on gadolinium-enhanced T1-weighted images (fig. 3). Based on these findings, the patient was diagnosed with lower rectal endometriosis. After informed consent was obtained, laparoscopically assisted low anterior resection was performed. A 10-mm trocar was inserted into the abdominal cavity, and pneumoperitoneum was achieved. There were adhesions to the right lower abdominal cavity, and a small amount of ascites was found in the pouch of Douglas.

Exfoliation was started from the presacral region to the right side of the rectum and the rectococcygeus ligament was cut. Exfoliation was continued to the levator ani muscle and mobilization of the left side of the rectum was performed. In front of the rectum, exfoliation was performed from the posterior wall of the vagina, but because the layer of exfoliation was unclear and tissue was solid around the tumor, the exfoliation was difficult. Since the left hypogastric nerve was involved by inflammation surrounding the tumor, the nerve was cut, and subsequently the left lateral ligament was cut. Next, exfoliation was continued to the right side of the rectum. After the inferior border of the tumor was confirmed by colonoscopy, the rectum was cut 1 cm distal to the inferior border of the tumor. Then a 3-cm skin incision was made in the lower abdomen, the specimen was pulled up and the rectum was cut 5 cm distal to the superior border of the tumor. After pneumoperitoneum, reconstruction was performed using the double stapling technique. Operative time was 520 min with a blood loss of 320 ml.

On pathological examination, endometrial tissue was found in all layers of the rectum. Malignant findings were not seen (fig. 4). Postoperatively, a rectovaginal fistula occurred on the 9th postoperative day, and an ileostomy was performed. After that, the patient's postoperative course was uneventful and she left the hospital on the 25th postoperative day; 4 months later the ileostomy was closed.

Discussion

Endometriosis affects approximately 15–20% of women of child-bearing age [1], and bowel endometriosis occurs in 5% of all endometriosis cases [3]. Athmanathan et al. [2] reported that 80% of the cases of bowel endometriosis arise from the rectum and sigmoid colon. Symptoms of rectal endometriosis include dysmenorrhea in 57–85.3% of patients [4, 5], dyspareunia in 55–57%, rectal pain in 41.2% [5], rectal bleeding in 14% [4], and tenesmus in 8.8% [5]. In our case, the patient had rectal pain during menstruation.

Physical examination, computed tomography, MRI and endorectal sonographic evaluation are useful in making the diagnosis. Heitkemper et al. [6] reported that computed tomography showed a sensitivity of 69%. However, the sensitivity of MRI for the diagnosis of colorectal endometriosis is much higher, at between 80 and 92.6% with a positive predictive value of approximately 89% [7, 8]. Endorectal sonographic evaluation is noninvasive and its sensitivity and positive predictive value are both 100% [8]. Endorectal sonography was indicated in our case due to its high feasibility and lower cost compared to MRI [9].

Significant resistance to the surgical treatment of colorectal endometriosis currently exists because of major complications such as colo- or rectovaginal fistulae [10]. Dubernard et al. reported that rectovaginal fistulae occurred in 10.3% of patients [11]. On the other hand, Fleisch et al. [12] reported the utility of surgical treatment for patients with persistent pain and found that 21 (91.3%) of 23 patients reported improvement in their symptoms. For patients who desire to become pregnant, long-term hormonal therapy for endometriosis is contraindicated; therefore, surgery is needed. Bailey et al. [13] reported that the pregnancy rate following surgery was 49%, strongly supporting the surgical treatment of rectal endometriosis.

The utility of laparoscopic colorectal resection for endometriosis has also been reported. Campagnacci et al. [4] reported that complete relief of pelvic symptoms was obtained in 71% of patients. Dubernard et al. [11] reported that all the items on the SF-36 Health Status and Quality of Life scores were significantly improved after laparoscopic colorectal resection for endometriosis. For patients with mild endometriosis, laparoscopic surgery provided improved fertility and pregnancy outcomes [14].

Abbott et al. [15] reported that the probability of requiring further surgery was 36% in patients with deep endometriosis, and furthermore, 38.6% of patients had residual or recurrent endometriosis. Rosin et al. [16] reported that the incidence of adhesion-related obstruction after laparoscopic colorectal surgery was 1.3%, which was lower than for open laparotomy; therefore, laparoscopic surgery for colorectal endometriosis is recommended if further surgery is needed. For patients whose lesions are located on the lower part of the rectum, exfoliation is needed up to the levator ani muscle; therefore, the laparoscopically assisted approach is more useful in providing a good operative field compared to open laparotomy. In our case, a rectovaginal fistula occurred on the 9th postoperative day and ileostomy was required, but intraabdominal adhesions were mild and ileostomy was performed easily using a laparoscopic approach.

In conclusion, for patients with lower rectal endometriosis for whom hormonal therapy is contraindicated, laparoscopically assisted low anterior resection is recommended for its visual amplification effect, minimal invasiveness and palliation of symptoms.

Fig. 1. On lower gastrointestinal series, poor extensibility of the rectum with irregular elevation and mucosal irregularity are observed (arrows). The portion of the rectum involved with endometriosis is approximately 35 mm from the anal verge.



Fig. 2. Colonoscopic findings. Tumor-like submucosal tumor in the anterior wall of the lower rectum is shown (arrows).

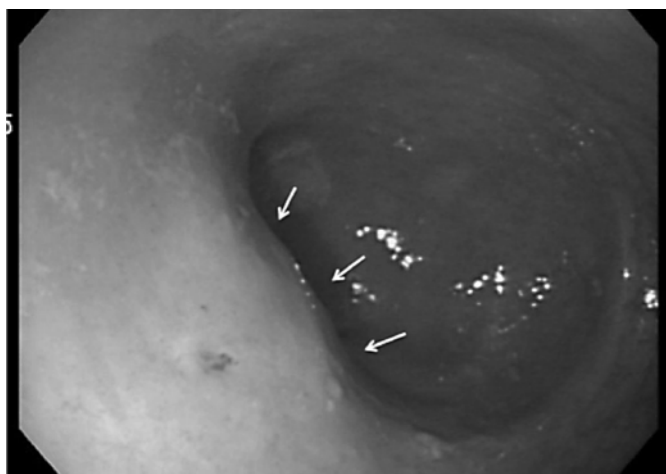


Fig. 3. Abdominal MRI. A mass which is slightly enhanced and demonstrates mass effect on the surrounding organs is shown on gadolinium-enhanced T1-weighted images (arrows).

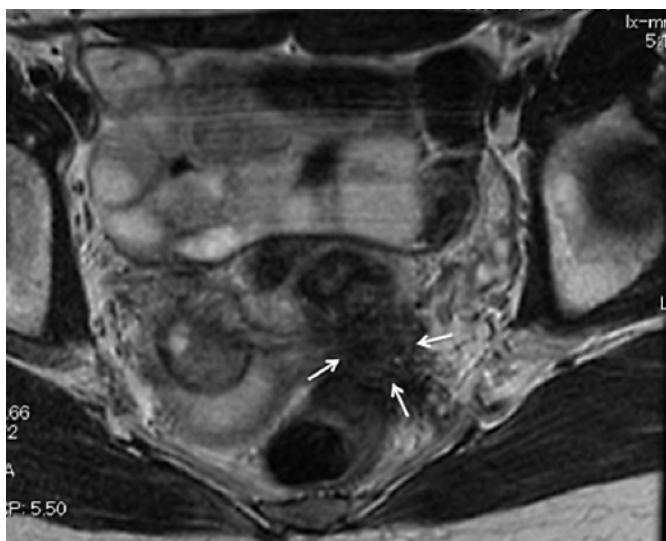
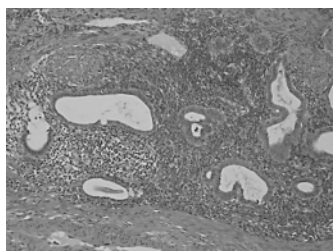


Fig. 4. Pathological findings. Endometrial-like glands are found in the all layers of the rectum. Malignant findings are not seen (HE $\times 100$).



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