

Case Report

Successful Treatment of Rectovaginal Fistula with Endoscopic Clipping: A Case Report

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Endoscopic clips have been used to control gastrointestinal bleeding for over 30 years. Recently, endoscopic clips have been used for a variety of non-hemorrhagic conditions. Here, we report a 70-year-old woman with a history of rectal cancer who received low anterior resection of the rectum and anastomosis 3 years ago. A complication of rectovaginal fistula was found after a recent hysterectomy for uterine myoma. Successful closure of the rectovaginal fistula was performed using the endoscopic clipping method. Diversion colostomy was not done for this patient. No recurrent rectovaginal fistula was found during follow-up for 6 months.
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Key Words

Rectovaginal fistula;
Endoscopic clipping

Endoscopic clipping was first introduced in 1975 by Hayashi et al.¹ Clips were originally designed as an alternative treatment to control bleeding by direct mechanical pressure. Although endoscopic application of clipping is a routine technique used for the emergency treatment of gastrointestinal bleeding and for prevention of bleeding and perforation in post-endoscopic polypectomy,^{2,3} currently, it is being used for various purposes. In our review of literature, several studies have reported endoscopic approaches for closure of the gastrocutaneous and colcutaneous fistula by clips.^{4,5} However, we found only 1 case report on the endoscopic management of the rectovaginal fistula.⁶ Here, we report a case of a patient with rectovaginal fistula who had successful closure of the fistula by an endoscopic clipping technique.

Case Report

A 70-year-old woman presented with uncontrolled flatus and loose feces from the vagina for 7 days. She did not complain of fever, nausea, vomiting, or abdominal pain. She had no history of diabetes mellitus and hepatic or renal disease but had hypertension, for which she was under regular medical treatment. She was diagnosed with rectal cancer, and she had received surgery for low anterior resection 3 years ago. Pathology examination of rectal cancer revealed stage II moderately differentiated adenocarcinoma. No adjuvant chemotherapy or radiotherapy was performed. She received regular follow-up postoperatively, and no local or systemic tumor recurrence was found thus far. Two weeks before this admission, she

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had received laparoscopic abdominal total hysterectomy for uterine mass, and the pathology of the uterus revealed benign myoma. Passage of stools from vagina was found 7 days postoperatively. Speculum examination by her gynecologist revealed erythematous external genitalia and stool in the vaginal canal with no discrete fistula visualized.

Abdominal computed tomography (CT) using oral and intravenous contrast agents revealed little air in vagina, but no definite tumor recurrence was found. (Fig. 1). Single-contrast barium enema examination confirmed the diagnosis of a rectovaginal fistula, revealing a fistula tract from the middle rectum to the vagina (Fig. 2).

On diagnosis of rectovaginal fistula, she was admitted for further management. A colonoscopic examination revealed a 6-mm mucosal break at the middle of the rectum around the previous rectal anastomosis site (Fig. 3A). Continuous air leakage from the vagina during the examination was also noted. The rectovaginal fistula opening was identified and good condition of the peripheral mucosa was noted, we decided to use simple and non-surgical treatment firstly. Two endoscopic clippings (HX-610-090L, OLYMPUS Co., Tokyo, Japan) were applied to close the fistula opening. There was no further air leakage to the vagina immediately post clipping (Fig. 3B). The patient tolerated the procedure well, without any complica-



Fig. 1. Abdominal computed tomography (CT) revealed little air in vagina.

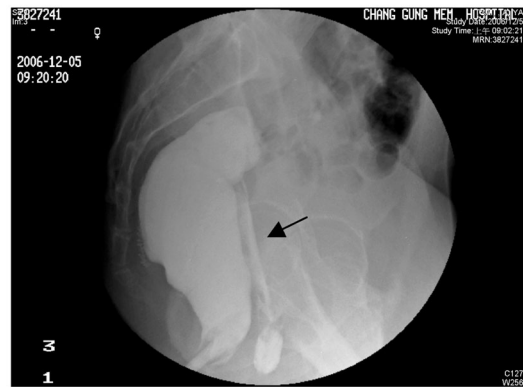


Fig. 2. Single-contrast barium enema revealed a fistula tract from the middle rectum to the vagina.

tions. A diverting colostomy was considered but we decided to observe the treatment result of clipping firstly. The symptoms completely resolved after clipping, and she was discharged 2 days after the procedure. No stool passage from vagina after discharge. Follow-up colonoscopy performed 21 days later revealed that the lesion had healed well (Fig. 3C). The success of the endoscopic clip in the management of rectovaginal fistula was recognized without diverting colostomy during follow-up of 6 months.

Discussion

A fistula is an abnormal connection or passage between 2 epithelial-lined surfaces.⁷ Most rectovaginal fistulas are acquired; obstetric injury alone accounts for nearly 88% of the cases.^{8,9} Other possibilities include complications of diverticulitis, pelvic surgery or radiation, and rectal trauma.

Rectovaginal fistulas are a rare complication after surgery for low anterior resection of the rectum. These complications are likely to be related to the partial unhealing of rectal anastomosis. In our case, the rectovaginal fistula was caused by secondary pelvic surgery. It was postulated that previous anastomosis had caused dense adhesion between the uterus and rectum, and that minor injury to the rectum during hysterectomy had subsequently caused the rectovaginal fistula.

Clinical features of the rectovaginal fistula are

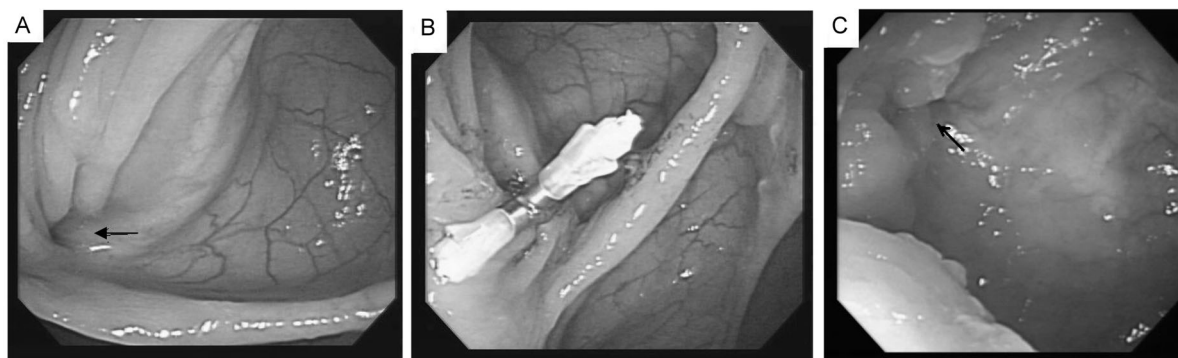


Fig. 3. (A) Colonoscopic examination showed a 6-mm hole at the middle rectum around the previous rectal anastomosis site. (B) Closure of the fistula opening was performed with two hemoclips. (C) Endoscopic view 21 days later revealed previous fistula opening was healed.

stool and air passage from the vagina. Other symptoms include urinary tract infection and perineal skin inflammation or infection. Symptoms of chronic inflammation and irritation in these patients have an effect on their social life and psychology and lead to sexual dysfunction. Most fistulas at the lower rectum are palpable by digital rectal examination. Contrast radiography is the most dependable method for diagnosing small and high rectovaginal fistulas.

Spontaneous healing may occur with adequate medical treatment such as total parenteral nutrition, antibiotics, and long-time fasting. However, surgical therapy remains the mainstay for managing complex fistula was not suitable for conservative management or underwent prolonged conservative management (without resolution). Operative access to this type of lesion includes fecal diversion, and/or transperineal approach of resection, or rectal anastomosis or repair. Operation of the middle and lower rectum is associated with complications, including urinary and sexual dysfunction. Resection of the involved portion of the rectum, redo of end-to-end anastomosis, and diverting colostomy were considered for our patient. However, because of previous low anterior resection for rectal cancer, a re-anastomosis procedure was very difficult to perform. Alternative operative access to the lesion, for this patient, included transanal endoscopic microsurgery (TEM) involving repair of the fistula with an advanced flap and temporary colostomy. The patient was very worried about the surgery and the possibility of a permanent colostomy; therefore, we reviewed the

literature and searched for a non-operative method for the management of the rectovaginal fistula.

Successful treatment of enteric fistulas with self-expanding stents has been described.^{10,11} Closure of low rectovaginal fistulas using an anal fistula plug and fibrin glue has also been reported.¹² The Surgisis® Biodesign™ Recto-Vaginal Fistula Plug (Cook Medical, Bloomington, IN, USA) is a newly developed commercial product, which is a minimally invasive alternative to the traditional fistula surgery. Ellis reported 7 patients who underwent bioprosthetic plug repair for rectovaginal fistula, and among them, recurrence was seen only in 1 patient (14%).¹³ The glue or plug method is suitable mainly for low, easily identifiable, and accessible rectovaginal fistulas. However, we did not choose this method because the cost is expensive and patient must receive surgical procedure. Complication of air embolism have been reported following glue injection under pressure.¹⁴

Repair of an enteric fistula with an endoscopic clipping has been reported. Seibert reported the use of an endoscopic device to repair a duodenal perforation.¹⁵ Lin reported on a gastrocolic fistula treated with endoscopic clipping.¹⁶ Michael reviewed the non-bleeding indication for endoscopic clipping.¹⁷ Successful closing small perforations, anastomotic leaks and fistulas throughout the gastrointestinal tract have been demonstrated in various case reports. All the procedures were performed immediately post trauma, the largest size was a 1-cm posterior duodenal wall perforation after a polypectomy.¹⁸ Closure of

colocutaneous fistula have been Reported.¹⁹ The advantage of colonoscopic examination before surgical treatment of enterocutaneous fistula is the exact decisions concerning the treatment modalities could be determined exactly by colonoscopic examination. Successful treatment of the endoscopic clipping depends on several factors such as the size of fistula, the time elapsed between fistula development and treatment, peripheral tissues, and the state of patient's health. A favorable outcome depends on rapid clip development to minimize bacterial contamination.^{20,21} Rectovaginal fistula of the present case was caused by an injury to the vagina during an operative procedure; the fistula was acute with a long tract, but it was not a chronic inflammation. The mucosa surrounding the fistula was in good condition; it had good blood supply and was small in size (without tension post-clipping). These conditions resulted in good healing post-endoscopic clipping.

In the present case, endoscopic clipping therapy was applied for an effective outcome because this therapy is a relatively easy, safe, and rapid procedure. We suggest that endoscopic clipping therapy should be considered for selected patients with a small benign rectovaginal fistula.

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病例報告

用內視鏡血管夾治療直腸陰道瘻管： 病例報告

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內視鏡血管夾被用於控制消化道出血已超過 30 年。最近血管夾更廣泛被用於各種非消化道出血的情況。我們報告一位 70 歲女性患者，三年前因直腸癌接受低前位切除手術後，最近因子宮肌瘤接受子宮切除手術，術後產生直腸陰道瘻管的併發症。我們在大腸鏡檢查中使用內視鏡血管夾成功治療直腸陰道瘻管。此病患不需要人工肛門，追蹤六個月無直腸陰道瘻管復發現象。

關鍵詞 直腸陰道瘻管 內視鏡血管夾。