

# Spontaneous closure of rectovaginal fistula after laparoscopically assisted vaginal hysterectomy: a case report and literature review

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## Summary

The occurrence of rectovaginal fistula (RVF) due to injury and infection during surgery has become an increasing trend. Currently the incidence is 0.9–9.9% and the vast majority of cases must be corrected surgically. The authors present a case of a 48-year-old patient who underwent late-onset rectovaginal fistula after laparoscopically assisted vaginal hysterectomy (LAVH). The RVF healed spontaneously with nutritional support and avoidance of infection.

*Key words:* Rectovaginal fistula; Spontaneous-healing; Nutritional support; Avoidance of infection.

## Introduction

In recent years, the occurrence of rectovaginal fistula (RVF) due to injury and infection during surgery has become an increasing trend, possibly because of the continuous broadening of the indications for gynecologic laparoscopic surgery and advances in the treatment of rectal cancer surgery. Currently the incidence is 0.9–9.9% [1, 2]. Once a RVF forms, the vast majority of cases must be corrected surgically because only a few heal on their own [3, 4].

The present work reports the self-healing of a single late-onset RVF after laparoscopically assisted vaginal hysterectomy (LAVH).

## Case Report

A 48-year-old female patient with adenomyosis and a left ovarian endometrioma underwent laparoscopically assisted vaginal hysterectomy (LAVH) and adhesionolysis on November 30, 2014. Severe pelvic adhesions were found, with the uterus enlarged to eight weeks in size. The posterior cul-de-sac of Douglas concave lesion was obliterated. Pelvic adhesions were loosened using scissors and an electric knife. After bipolar coagulation hemostasis, the muscularis of the rectum was reapproximated with 2-0 vicryl plus, and the pelvic cavity was drained percutaneously postoperatively. The patient was not allowed to consume food or drink by mouth for three days, until passage of flatus. On the sixth postoperative day, after defecation, the patient began eating some semifluids. Constipation was managed with phenolphthalein tablets from the sixth day onwards. Postoperative pathology confirmed that adenomyosis and left ovarian endometriosis cyst were present in the specimens.

On the 12<sup>th</sup> postoperative day, the patient returned to the hos-

pital complaining of fecal incontinence through her vagina. She had difficulty passing stool and experienced chronic constipation after discharge. Upon vaginal examination, after evacuation of feces from the vagina, a 2-cm fistula was found at the left vaginal cuff, confirmed by rectal examination. The patient was placed on a non-residue, semi-liquid diet. The vagina was lavaged daily with normal saline. Then she was treated with a defaassium permanganate bath with 1:5,000 combined with anti-inflammatory and infusion therapy. After seven days, vaginal inflammation was mainly controlled, and the patient was discharged with dietary guidance and advised to undergo regular vaginal disinfection with 0.5% povidone iodine (PVP-I) liquid in anticipation of surgical repair in 3–6 months. By the 30<sup>th</sup> postoperative day, the patient reported that only gas was being passed from her vagina, not stool.

Vaginal discharge ceased 37 days after the surgery. PV and DRE did not show any evidence of fistula. Methylene blue testing of enema was negative. The patient resumed a normal diet and normal bowel function, with no feces or gas from the vagina. Per the patient's wishes, no further endoscopic examinations were performed. Upon follow-up examination, the patient had experienced normal defecation without recurrence a year after surgery.

## Discussion

RVF is a rare complication that can occur after hysterectomy. According to an American Association of Gynecologic Laparoscopic Surgery (AAGL) review of 14,911 cases of early ovarian cancer, the complication rate of laparoscopic hysterectomy is 6% and the incidence of intestinal injury is 1% [5]. Van der Voort *et al.* reported the incidence of gastrointestinal injury in laparoscopic surgery to be 0.13% [6]. The most common site of injury was the small intestine (55.80%) followed by the large intestine (38.60%).

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Currently, RVF is classified as simple and complex according to its size, location, and cause. RVF also is classified into low and high varieties. RVFs between the lower third of the rectum and the lower half of the vagina are considered low. A high RVF is located between the middle third of the rectum and the posterior vaginal fornix. Small fistulas are less than 0.5 cm in diameter, fistulas 0.5–2.5 cm are considered medium-sized, and large fistulas exceed 2.5 cm.

Clinical features of a RVF include vaginal gas and fecal incontinence [7]. Other symptoms may include low fever and perineal pain. For symptomatic patients with suspected small fistulas that cannot be identified at during pelvic examination, anal X-ray imaging, methylene blue testing, transrectal ultrasound, pelvic cavity CT, and MRI may play a key role in the diagnosis and evaluation [8, 9].

The anatomy of RVF is complex and its causes are diverse. Studies have shown that extensive use of electrocoagulation, and the postoperative placement of pelvic drainage tubes as in this case may predispose to RVF [10]. Chapron *et al.* found that LAVH in the classification of laparoscopic surgery belongs to a complicated medical operation [11]. The more complicated the operation, the greater the incidence of complications. Rectal injury often occurs in LAVH or Douglas concave lesions. During LAVH, the rectum is easily injured because it is adjacent to the uterus, especially when the endometriotic lesions located in the cul-de-sac are removed [12]. The majority of patients have severe pelvic adhesion and the Douglas concave lesion is partly or fully closed. During the operation, the posterior uterine wall adheres to the rectal wall and their boundaries are not clear. After separation of the adhesions, the rectal wound area is weak, and aggressive electric coagulation may cause wound coagulation and necrosis, which leads to delayed RVF. Straining to pass stool and chronic constipation might contribute. When placing pelvic drainage after surgery, repeated stimulation of foreign bodies also affect the healing of the wound on the surface of the intestine.

RVF is described as “women’s most depressing, most awkward, most embarrassing, and frustrating experience” [13–15]. RVF is not only uncomfortable for the patient but also a challenge to surgeons and the gynecologists because of the complexity of the treatment [16]. There are many strategies for management of RVF. The specific choice depends on the location and size of the fistula, the condition of surrounding tissues, and any history of prior attempts at surgical repair. The majority of surgical procedures are divided into two categories. One is transperineal surgery, including anal, vaginal or perineal surgery, which is mainly suitable for the low RVF. The other is abdominal surgery, sometimes with laparoscopic, which is mainly used in high RVF. Lin *et al.* retrospectively analyzed 52 cases of iatrogenic RVF. Patients were treated by a non-surgical treatment, by permanent diverting stoma (loop transverse

colostomy), or by surgical repair by various approaches [17]. Surgical repair is the preferred method that can cure RVF. Mason’s operation is a favored method for managing mid and lower RVF [3]. Kosugi *et al.* also found that some fistulae were amenable to spontaneous healing by diverting stoma and general non-surgical treatment.

The present patient unexpectedly achieved relatively satisfactory results through the joint efforts of both herself and her medical team. Upon review of her medical history the following recommendations may be drawn: 1) Preoperative risk assessment for surgery, intraoperative, and postoperative complications must be fully considered, which can allow patients to have a mental preparation. After the patients are diagnosed with RVF, clinicians must communicate with them in a timely manner, foster understanding and respect, and attempt to relieve their concerns. In the present case it was definitely helpful during treatment to build the patient’s confidence, and encourage her to cultivate a positive attitude. 2) The patient should be hospitalized in a timely manner and treated positively and effectively to control vaginal inflammation. The edema then subsides, which is the key to the case of RVF spontaneous healing. 3) The patient should insist on a semifluid diet without slag to prevent fecal discharge through the vagina. Diet designed to keep the intestines empty would reduce stool volume and prevent exacerbation of the fistula, which is another important factor in the healing of RVF.

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