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CASE REPORT

Martius flap reconstruction for rectovaginal fistula after stapled hemorrhoidopexy (Longo operation): a case report

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Abstract

Purpose A rectovaginal fistula (RVF) is a rare disease. It's an epithelium-lined abnormal communication between rectum and vagina. It represents approximately 5% of all anorectal fistulas. RVF may have different causes.

Methods We present a case of a 58-year-old woman with a rectovaginal fistula after stapled hemorrhoidopexy (Longo operation).

Results A 58-year-old woman presented herself in our department with vaginal fecal discharge and vaginitis almost one month after a stapled hemorrhoidopexy was performed in another hospital. On vaginal examination, a large dorsal defect was palpated at four cm. On rectal examination, the stapler line was palpable at four cm and just distal to this stapler line, a large defect could be palpated. A lower gastrointestinal tract radiography was performed and identified a RVF. The patient was put on antibiotics and two operations were planned. First, a temporary ileostomy was created. After healing of the vaginitis, reconstructive surgery with anatomic fistula repair in combination with the interposition of healthy, vascularised tissue was performed. In this case, we chose the Martius flap. The operation as well as the postoperative course was uneventful.

Conclusions Cases of postoperative RVF have been increasingly reported since the introduction of stapled hemorrhoidopexy. Patients with RVF can have a varying degree of symptoms. Diagnosis is primarily based on the patient's medical history together with a clinical examination. There are many surgical approaches for RVF. Anatomic fistula repair alone is associated with lower success rates compared with combined procedures with the adjunctive interposition of healthy, vascularised tissue.

Keywords Martius flap · Rectovaginal fistula · Longo · Stapled hemorrhoidopexy · Surgery · Complication

Introduction

A rectovaginal fistula (RVF) is a rare disease [1, 2]. It's an epithelium-lined abnormal communication between rectum and vagina [1–4]. It represents approximately 5% of all anorectal fistulas [1, 2, 4]. The most common cause of RVF is obstetric trauma (85–88%) and the second most common cause is Crohn's disease [1–6]. Other causes include iatrogenic trauma following surgery involving the vagina, perineum, rectum or anus, malignancy, and radiation therapy [1–5].

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Case report

Initial presentation

A 58-year-old woman presented herself in our department with vaginal fecal discharge and vaginitis almost 1 month after a stapled hemorrhoidopexy (Longo operation) was performed in another hospital. On vaginal examination, a large dorsal defect was palpated at four cm. On rectal examination, the stapler line was palpable at four cm and just distal to this stapler line, a large defect could be palpated. A lower gastrointestinal tract radiography (barium enema) was performed and identified immediately distal of the recto-anal junction a RVF (1.5 cm width) (Fig.1).

Operative treatment

1. Temporary ileostomy

Before definitive reconstructive surgery could be scheduled, the vaginitis needed to be healed. The patient was put on oral

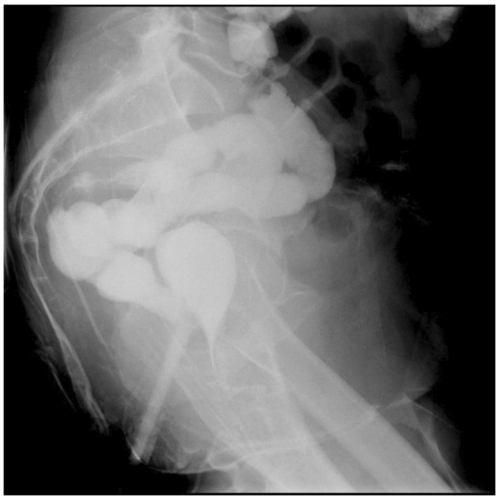

Fig. 1 Barium enema identifying a rectovaginal fistula

antibiotics (amoxicillin and clavulanic acid 875 mg three times a day for two weeks). Further, three days after consultation and almost one month after the initial Longo operation, a temporary ileostomy was created in addition to treat the vaginitis.

2. Transperineal excision of the RVF in combination with Martius flap interposition

After healing of the vaginitis, reconstructive surgery was scheduled. This operation took place 3.5 months after the initial Longo operation and consisted of two parts:

1. Colorectal surgeons: transperineal excision of the RVF with closure of the vaginal and rectal defect

2. Reconstructive surgeon: Martius flap interposition (left labia majora)

The patient was put in the lithotomy position and skin markings were made to facilitate the procedure (Fig.2).

The RVF was identified (Fig.3). A horizontal incision in the perineal region was made to dissect the posterior vaginal wall from the rectum and mobilize the rectovaginal fascia up

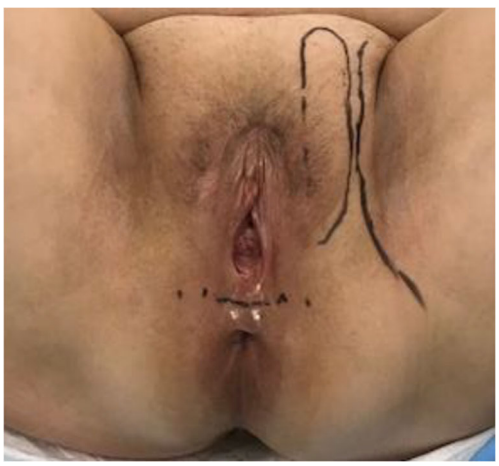

Fig. 2 Patient in the lithotomy position with skin markings

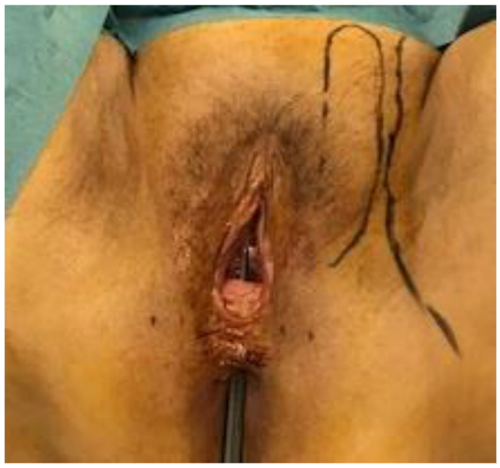

Fig. 3 Identification of the rectovaginal fistula

to the level of the fistula. After identification, the rectal and vaginal parts were separated and two loops were put in place (Fig.4).

The fistula was excised and the vaginal and rectal defects were separately closed with a running suture vicryl 2/0 (Fig.5). In this case, there was no anorectal sphincter involvement; otherwise, an extra repair should have been performed to prevent incontinence.

To achieve proper healing of the fistula, healthy tissue between rectum and vagina is mandatory. Therefore, a Martius flap was indicated.

A vertical incision in the left labia majora was made. Adipose tissue from the interspace between the bulbocavernosus and ischiocavernosus muscle was dissected. During the dissection, extreme caution was taken to preserve the posterior vascular pedicle (Fig.6).

From the perineal incision, a tunnel was created under the bulbospongiosus muscle. The flap was mobilized through this

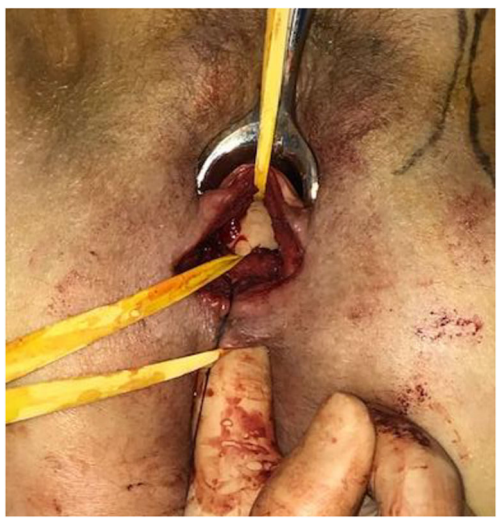

Fig. 4 Two loops separating the rectal and vaginal part of the rectovaginal fistula

Fig. 5 Vaginal defect closed with a running suture vicryl 2/0

tunnel and inserted in the rectovaginal defect (Figs. 7 and 8). The flap was fixated with vicryl 2/0.

A drain was put in place and both incisions were closed (Fig.9).

Postoperative course

The postoperative course was uneventful. The drain could be removed on the second postoperative day and the patient could leave our ward on the same day.

A lower gastrointestinal tract radiography (barium enema) was repeated almost two months after transperineal excision of the RVF in combination with Martius flap interposition and showed no residual RVF (Fig.10).

To finalize the patient's treatment, the ileostomy was closed almost six months after the initial stapled hemorrhoidopexy (Longo operation) and two and a half months after the Martius flap reconstruction.

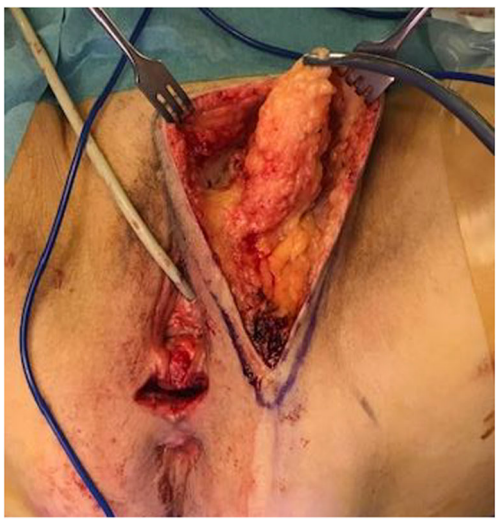

Fig. 6 Dissection of the Martius flap (left labia majora)

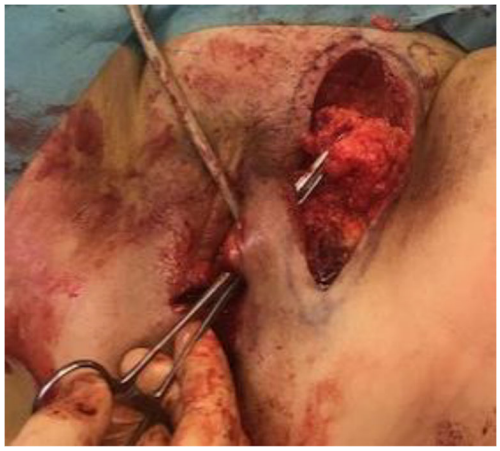

Fig. 7 Tunnel under the bulbospongiosus muscle

Discussion

The presented case showed that a "simple" surgical intervention can have disastrous consequences when not performed accurately.

Etiology

RVF is an epithelium-lined abnormal communication between rectum and vagina [1–4]. It represents approximately 5% of all anorectal fistulas [1, 2, 4]. The most common cause of RVF is obstetric trauma (85–88%) and the second most common cause is Crohn's disease [1–6].

Other causes include iatrogenic trauma following surgery involving the vagina, perineum, rectum or anus, malignancy, and radiation therapy [1–5].

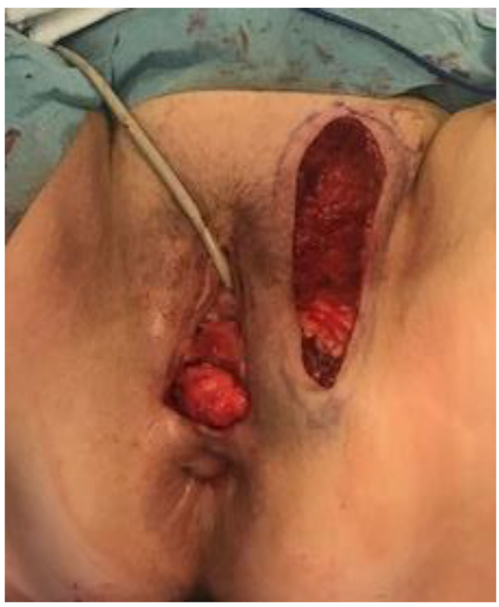

Fig. 8 Mobilization of the Martius flap through the tunnel in the rectovaginal defect

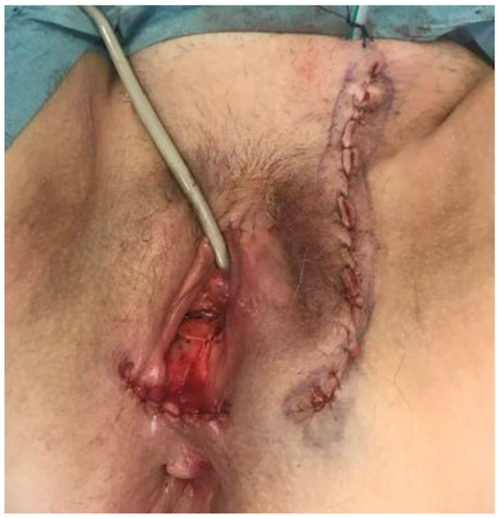

Fig. 9 Urinary catheter, closed incisions, and drain

RVF is an absolute rarity after conventional haemorrhoid surgery; cases of postoperative fistulas have been increasingly reported since the introduction of stapled hemorrhoidopexy and stapled pelvic floor surgery [2]. They are usually caused by errors in surgical technique, where the posterior vaginal wall is also caught in the stapler [2].

Presentation and diagnosis

Patients with RVF can have a varying degree of symptoms based on the location, size, and etiology of the RVF [3]. A small fistula can even be asymptomatic [1]. Symptoms include the passage of flatus or stool through the vagina, feculent odor, bleeding, tenesmus, dyspareunia, recurrent genitourinary infections, and recurrent vaginal mucosal inflammation [1–3, 6].

The diagnosis of RVF is primarily based on the patient's medical history together with a clinical examination [1, 2].

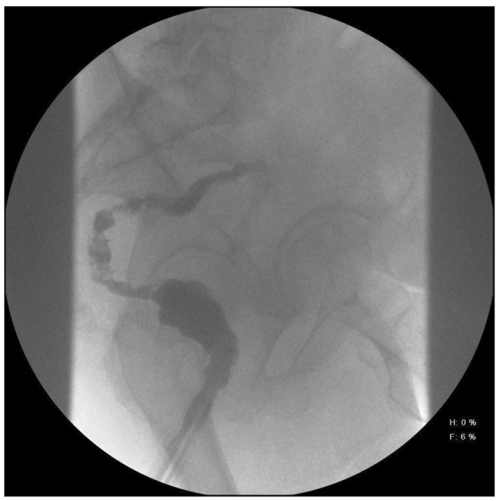

Fig. 10 Postoperative barium enema identifying no residual rectovaginal fistula

When the diagnosis or etiology remains unclear, additional examinations should be considered. These include colonoscopy, magnetic resonance imaging (MRI), computer tomography (CT), colon contrast study, or endorectal ultrasound (ERUS) [1–3].

An assessment of sphincter function is important because it plays an important role when choosing the surgical procedure [1, 3, 5].

Classification

Classification of RVF is based on location, size, and etiology [3, 5].

1. Location

Low fistulae are located at the dentate line and open inside the posterior vaginal fourchette [3, 5]. High fistulae have a vaginal opening near the cervix [3–5]. And middle fistulae comprise anything in between [3, 5].

2. Size

Only one publication speaks about a specific classification based on size. Small fistulae are classified as < 0.5 cm, medium fistulae 0.5 to 2.5 cm, and large fistulae are larger than 2.5 cm [3].

3. Simple—complex

Simple RVF are located in the lower and middle-third of the vagina, their diameter is less than 2.5 cm, and they are typically caused by trauma or local infection [1, 3–5].

Complex RVF are located in the upper third of the vagina, have a diameter of more than 2.5 cm, and are caused by inflammatory bowel disease (Crohn's disease), irradiation or malignancy [1, 3–5]. Recurrent fistulae are also included in this category [3–5].

Treatment

Prior to attempting an operative repair of the RVF, the surgeon must ensure that infection and local inflammation have resolved [3, 4]. These include treatment of the underlying cause of the fistula (e.g., medical therapy for Crohn's disease), antibiotic therapy, or drainage of an abscess [3, 4]. An ostomy is rarely required in anal fistula surgery; the rate is much higher in RVF [2]. In general, the decision must be made based on the local condition and individual situation [1, 2].

The treatment of RVF presents a surgical challenge [2]. Many factors must be considered when choosing an operative approach [1, 3–5]. Patient's comorbidities, fistula

localization, previous repairs, and sphincter integrity are all concerns [1, 3–5].

There are different surgical options [2–4]. Transabdominal approaches are used for the repair of higher fistulas [1, 2, 4]. Lower RVF are usually reconstructed using an anal, perineal, or vaginal approach [1, 4]. Operative treatment includes sphincteroplasty, advancement flaps, fistula plug, vaginal repair, transperineal repair, and tissue interposition (Martius flap and Gracilis flap) [2–4].

Tissue interposition—Martius flap

Anatomic fistula repair alone is associated with lower success rates compared with combined procedures with the adjunctive interposition of healthy, vascularised tissue [1]. In this case, we used the Martius flap reconstruction so we will elaborate on this technique.

The Martius procedure was first described by Heinrich Martius in 1928 [1, 4]. This technique used a vascularised adipose tissue flap from the labia majora between the bulbospongiosus and ischiocavernosus muscle with or without the muscle [1–4]. The major drawback of this technique is postoperative dyspareunia, which has been reported in up to 30% of cases [4, 6].

Conclusion

RVF is an absolute rarity after conventional haemorrhoid surgery; cases of postoperative fistulas have been increasingly reported since the introduction of stapled hemorrhoidopexy [2]. Patients with RVF can have a varying degree of symptoms [3]. The diagnosis of RVF is primarily based on the patient's medical history together with a clinical examination [1, 2]. When the diagnosis or etiology remains unclear, additional examinations should be considered [1–3]. Prior to attempting an operative repair of the RVF, the surgeon must ensure that infection and local inflammation have been resolved [3, 4]. Operative treatment includes sphincteroplasty, advancement flaps, fistula plug, vaginal repair, transperineal repair, and tissue interposition (Martius flap and Gracilis flap) [2–4]. Anatomic fistula repair alone is associated with lower success rates compared with combined procedures with the adjunctive interposition of healthy, vascularised tissue [1]. In this case, we used the Martius flap reconstruction.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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