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Rectovaginal Fistula: A New Approach By Stapled Transanal Rectal Resection

Giovanni Li Destri · Beniamino Scilletta · Tiziana Grazia Tomaselli · Giuseppe Zarbo

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Abstract Many surgical procedures have been developed to repair rectovaginal fistulas even if no "procedure of choice" is reported. The authors report a case of relatively uncommon, complex, medium-high post-obstetric rectovaginal fistula without sphincteral lesions and treated with a novel tailored technique. Our innovative surgical management consisted of preparing the neck of the fistula inside the vagina and folding it into the rectum so as to enclose the fistula within two semicontinuous sutures (stapled transanal rectal resection); no fecal diversion was performed. Postoperative follow-up at 9 months showed no recurrence of the fistula.

Keywords Rectovaginal fistula · Obstetric trauma · STARR

Introduction

Although rectovaginal fistula (RVF) is relatively uncommon,[1,2] its prevalence is 0.1% in all vaginal deliveries,[3] and it represents what is "*probably the most distressing and demoralizing condition that a woman can experience.*"[4] Today, it is rare in developed countries, but it is still on the increase in Africa and South Asia, where it is devastating for those concerned because of the stigma attached to it and the lack of medical care resources. Indeed, currently, several international projects are targeting obstetric fistula and how to engage the issue.[5,6]

Acquired RVF can be caused by infection, inflammation, tumor or trauma, and obstetric trauma is the undoubtedly most common trauma causing the lesion.[1,2,4,7–11]

G. Li Destri (✉) · B. Scilletta
Department of Surgical Sciences, Organ Transplantation, Advanced Technologies, University of Catania,
Via Guicciardini 6,
95030 Sant'Agata Li Battiati, Catania, Italy
e-mail: g.lidestri@unict.it

T. G. Tomaselli · G. Zarbo
Department of Obstetric and Gynecology, Radiology, and Anesthesiology, University of Catania,
Catania, Italy

We report a case of RVF that came to our observation and describe the patient tailored treatment adopted.

Case Presentation and Technique

The first vaginal delivery of a 29-year-old woman required episiotomy (gravida 0). Detailed information on obstetric history was not available. At bowel canalization after delivery, the patient referred transit of gas and feces into the vagina; she had no symptoms of fecal incontinence.

In the objective examination, the two-handed palpation revealed a fistula between the medial and upper third of the posterior wall of the vagina and the rectal ampulla. Vaginal exploration showed rectal mucus membrane on the posterior wall of the vagina. Rectal exploration revealed normal sphincter tone.

Proctoscopy identified RVF 6 cm from the anal orifice, and echoendoscopy showed intact internal and external anal sphincters. Anal manometry did not reveal functional changes.

The fistula was not repaired immediately to allow the fistula margins to decongest and hopefully close spontaneously. As it did not heal, surgery was performed 4 months after delivery when inflammation had reduced.

Oral cathartic bowel preparation. The presence of RVF did not allow microlax enemas preparation. The patient was placed in lithotomy or knee–chest position.

Step 1 of the surgical approach involves (vaginal site) dissection facilitated by infiltration of xylocaine 2%, with epinephrine diluted with saline. The opening in the posterior wall of the vagina was enlarged by removing all granulation tissue and left a tear about 3 cm in diameter. The vaginal wall was dissected and peeled away from the rectum wall for over 2 cm circumferentially to the fistula (Fig. 1). A cross silk suture was placed on the neck of the fistula that was then introflexed into the rectum (Fig. 2). In step 2 (rectal site), the neck of the fistula was pulled into the rectum (Fig. 3), and two semicontinuous sutures were positioned respectively 2 cm above and 1 cm below; stapled transanal rectal resection (STARR) was performed. In step 3 (vaginal site), the rectovaginal septum was advanced above the rectal staple; the vaginal wall was slipped over the rectum so as to cover the rectal staple with a flap of intact vagina. The vagina was sutured using 3/0 interrupted suture. Endovaginal drain and endorectal hemostatic gauze were put in position.

The histology describes the rectum wall as having a nonspecific chronic inflammation of the mucus layer, thickening of the submucosal layer, and tunica muscularis normal.

Follow-up at 9 months after surgery showed that no recurrence of the fistula was observed.

Discussion

RVF can be classified as low (anovaginal) or medium-high when it involves the upper two thirds of the vagina, and also as simple (low fistula under 2.5 cm in diameter) or complex (high fistula over 2.5 cm in diameter) varieties.[1] Low fistula is almost always caused by obstetric trauma,[9] is often associated with anal-sphincter disruption,[7] and is the most common type; indeed, most series only report treatment of low obstetric RVF.[1,7,9,10–13]

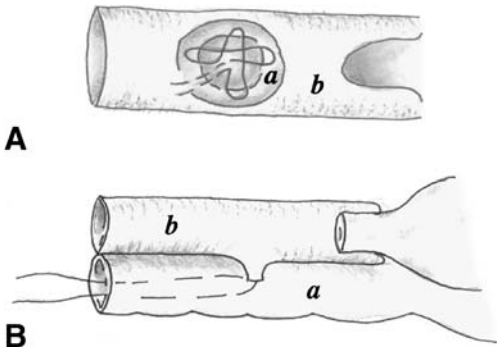

Figure 2 **A** A cross silk suture was placed on the neck of the fistula. **B** The neck of the fistula was introflexed into the rectum. *a* Rectum wall, *b* vaginal wall.

Our patient presented a relatively uncommon, complex, medium-high post obstetric RVF classified as type II by Khanduja et al.[13] Preoperative endoscopy and manometry were performed to rule out sphincteral lesions that manifest only later on in most patients with normal continence status.[14]

Spontaneous closure of RVF within 12 weeks[15] or cases of successful conservative treatment (electrocauterization, fibrin glue) are rare.[7,16] Currently, surgery repair is the most appropriate treatment.

Since the 1980s,[17] most surgeons have adopted the transanal approach where a rectal flap is advanced to close the high-pressure side.[18] Additional surgical options include the transperineal approach and direct fistula repair with or without interposition of healthy tissue[1,2] or changing the fistula into a fourth degree tear and, hence, repairing it with an overlappy sphinteroplasty.[1]

The studies reported in literature are heterogeneous or small, and thus, the incidence of postoperative recurrences

Figure 1 Rectal mucous can be observed through the posterior vaginal wall.

Figure 3 The neck of the fistula was pulled into the rectum before STARR.

varies. Moreover, there is no "procedure of choice"[16] (level I of evidence), as surgery is often not successful because surgeons have to repair traumatized, poorly vascularized tissues that are often affected by sepsis. Consequently, other surgical procedures have been developed, such as interposition of tissue (muscle or dermal graft) between vaginal and rectal suture lines.[7,12,16]

Our patient presented a relatively uncommon post-obstetric RVF, and we used a modified technique to repair the high fistula, as we felt the above-mentioned methods would not have been easy to perform. Our innovative surgical management consisted of preparing the neck of the fistula inside the vagina and folding it into the rectum so as to enclose the fistula within two semicontinuous sutures (STARR),[19] this being our standard technique to treat some defecation disorders. We performed a three-step surgical approach and feel that this prevented the vaginal and rectal sutures from overlapping and, thus, created two different levels.

Besides, we adopted a two-phase therapeutic approach. After initially allowing the inflammation to reduce, surgery was performed and the fistula repaired 4 months after it had appeared. This interval allowed us to repair the fistula directly with a good possibility of success and to avoid "painful" colostomy. It must be kept in mind that associated fecal diversion is recommended only in RVF where there is a risk of recurrence, as there are no reports in the literature showing that fecal diversion facilitates healing of non-complicated RVF.[10,20]

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