MARTIUS FLAP REPAIR FOR COMPLEX RECTOVAGINAL FISTULA

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Complex rectovaginal fistulas are uncommon but can be very difficult to manage. There are various techniques for repair, including endorectal advancement flaps, transperineal and transvaginal approaches, and fistula plugs, with varying success rates from 50-60% for the primary procedure to >70% after multiple procedures (1, 2, 3). For women with inflammatory bowel disease, history of radiation, or for those who failed multiple other repairs, surgical options may involve the use of autologous muscle grafts or proctectomy with colonic pull-through (4, 5, 6). The Martius graft is well-described for repair of cysto- or urethrovaginal fistulas (7). Adaptation of the Martius flap for complex rectovaginal fistulas have been reported in the colorectal surgery literature. Success rates range from 60% to 100% (8-13). The principles of repair involve transplanting a pedicle muscular graft harvested from the labia majora and transposition of the graft through a subcutaneous tunnel. The graft overlies the rectal closure and separates the rectal and vaginal walls, filling in the dead space and enhancing granulation tissue.

A consecutive series of patients with complex rectovaginal fistulas were retrospectively reviewed from a prospective database between 2008 and 2012 at a single institution. Patient demographics, prior attempts at repair, and pre- and postoperative functional status were documented. Colonoscopy was done in patients with inflammatory bowel disease or in whom diagnostic or screening colonoscopy was indicated. Patients with uncontrolled perineal sepsis or severe fecal soiling due to the fistula underwent fecal diversion. Repair of the fistula was not attempted until perineal sepsis and inflammation had resolved.

CASE PRESENTATION

We present in detail one patient in our case series. This is the case of a 53-year old Caucasian woman with a history of hepatitis C and diabetes, not on interferon, who presents with a recurrent low rectovaginal fistula following hysterectomy. She had undergone previous episiotomy with transvaginal fistula plugs and two failed rectovaginal fistula plugs. She reports solid stool per vagina daily. She denies prior history of anal incontinence, urinary incontinence, or pelvic organ prolapse. She refused temporary diverting stoma. On physical examination, she is of average build, and colorectal examination showed good squeeze and resting tone. A distal rectovaginal fistula was identified in the anterior midline, situated about 1-1.5 cm from the anal verge, about 0.75 cm in diameter. Anal sphincter evaluation with manometry and endoanal ultrasound was not repeated following her prior episiotomy. Full mechanical bowel preparation was given. Antibiotic prophylaxis with a single dose of broad-spectrum antibi-
onic was also given 30 minutes prior to the operation.

OPERATION

The patient is placed in the modified lithotomy position. A vertical incision is made in the perineum and is carried out to the inferior margin of the fistula. Marcaine with 1:200,000 units of epinephrine is injected into the rectovaginal septum for hemostasis and hydrodissection of the planes. The posterior vaginal wall is sharply dissected free from the rectum. The rectovaginal septum is opened and is mobilized in all directions. Wide mobilization of the rectum and vagina is necessary so that a multilayer closure can be performed and reapproximation of the tissue surfaces can occur without any tension. Local anesthetic is injected into the labia majora.

A vertical incision is made in the labia majora to expose the bulbocavernosus fat pad. Blood supply to the fat pad is provided inferiorly by posterior labial vessels, superiorly by the external pudendal artery, and laterally by the obturator artery (fig. 1). The borders of dissection include the labial crural fold laterally, the labia minora and the bulbocavernosus muscle medially, and the Colles’ fascia covering the urogenital diaphragm posteriorly. Flap harvest is accomplished in a lateral to medial fashion (fig. 2). For rectovaginal fistula repair, the blood supply to the graft is based on the posterior blood vessels, which include the perineal branch of the internal pudendal artery. The entire thickness of the fibrofatty flap is included in a small penrose drain. Gentle downward traction is applied to aid in the dissection. The graft is transected superiorly. The operator should not divide the pedicle graft until it has been determined that there is adequate length that has been developed. A hemostat is used to develop a subcutaneous tunnel between the episiotomy and labial incisions. The hemostat is then used to transfer the fibrofatty pad from the harvest site, through the tunnel, to the level of the fistula repair (fig. 3). It is very important not to twist...
the graft, and to ensure that it is properly oriented.

The fistula tract is excised. The vaginal wall is reapproximated with absorbable sutures. This is a tension-free repair. The rectal edges are also freshened up and the rectal mucosa is approximated with absorbable sutures. The flap sits between the rectum and the vagina. The sphincter muscles are reapproximated. The flap is gently sutured into position. Hemostasis is obtained, the wound is irrigated, and the perineal skin is then closed. A small drain is left to keep the wound open. The labial skin is closed in two layers with absorbable sutures. A penrose drain is left at the inferior border of the incision for drainage.

Technical tips

– Allow time for perineal sepsis and inflammation to resolve before attempting repair. Fecal diversion and/or placement of setons or drains may be necessary to achieve this.
– Ensure adequate length on the flap before transection.

RESULTS

Five patients with a mean age of 48.4 years (32-64) were treated. Etiologies of the fistulas were obstetric, iatrogenic (after hysterectomy), Crohn’s disease, cryptoglandular, and idiopathic. The patients had undergone a mean of 2.6 (range 1-5) prior repairs. Of the total of 13 prior attempted repairs, eight were advancement flaps, two were episioproctotomies, two were fistula plugs, and one was an interposition mesh graft. Three of the five had diverting ileostomies prior to the Martius flap procedure, one underwent diverting ileostomy at the time of the Martius flap procedure. The time from first symptoms to first attempted repair was a mean of 14.4 months (range 2-31 months). Endoanal ultrasound demonstrated sphincter defects in three of the five patients, although none of the patients had symptomatic fecal incontinence pre-operatively. All repairs involved either sphincteroplasty or perineoplasty in addition to the flap repair. Mean follow up was 25.6 months (3-44). There were no cases of wound complications, recurrence, or functional complications such as dyspareunia. Three of the four patients who had undergone diverting ileostomy have undergone ileostomy reversal.

CONCLUSIONS

The Martius flap technique can be employed with minimal morbidity and excellent cosmetic outcome for complex rectovaginal fistula that have failed other attempts at repair. Patients often have associated asymptomatic sphincter defects that should be repaired at the time of fistula repair. While fecal diversion prior to fistula repair can be helpful in clearing perineal sepsis, it is not absolutely necessary for the success of fistula repair.

REFERENCES


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