The Use of Transanal Rectal Advancement Flaps in the Management of Fistulas Involving the Anorectum


Between 1981 and 1986, transanal rectal advancement flaps were employed in the surgical management of 39 anorectal fistulas at the Cleveland Clinic. Included were 23 low rectovaginal, 12 fistulas-in-ano and, four rectourethral fistulas. Nineteen fistulas occurred in patients with Crohn’s disease while the other 20 included 11 due to obstetric or surgical injury. This technique has become the Clinic’s standard management for low rectovaginal fistulas but is reserved for complex fistulas-in-ano. Active proctitis or malignancy are contraindications to the procedure. Surgery requires elevation of a broad-based rectal flap, curettage of the tract, and advancement and primary suture of the flap over the internal opening. Fistulas were eradicated in 27 cases (69.2 percent) including 11 of 19 due to Crohn’s disease (57.9 percent) and 16 of the 20 (80.0 percent) from other causes (mean follow-up, 25 months). Rectovaginal fistulas healed in 60.0 percent of those with Crohn’s disease compared with 76.9 percent of those due to other causes. Complex fistulas-in-ano in Crohn’s disease did less well. Only two of six of these fistulas healed. Temporary stoma diversion was used on nine occasions and a successful outcome was achieved in only four, indicative of the greater complexity of these cases. It is concluded that the transanal rectal advancement flap can be an effective method of repair for fistulas of the anorectal region including selected cases due to Crohn’s disease. [Key words: Anorectal fistula; Crohn’s disease; Rectal advancement flap]

DESPITE THE WEALTH of material written about fistulas involving the anorectum, most are relatively simply managed by standard surgical procedures. However, a proportion, including complex fistulas-in-ano and rectovaginal and rectourethral fistulas, demand alternative surgical techniques for a successful outcome. One such method of repair is the transanal rectal advancement flap that has been used at The Cleveland Clinic Foundation since 1981.

With the patient in the prone position, a transanal approach is used to raise a partial-thickness rectal wall flap off the underlying tissues. The flap is then advanced distally and sutured over the anorectal opening of the fistula. The surgery is simple, does not disturb the sphincter mechanism, and usually is performed without a diverting stoma.

The technique was first described in 19021 and a modified form of the procedure was presented by Laird in 1948.2 The latter is the technique more closely followed in several recent reports of repair for low rectovaginal,3-5 anorectal,1 and rectourethral fistulas.7 Occasional reports of the successful use of this repair for fistulas occurring in patients with Crohn’s disease3,8 have appeared. These reports have encouraged the Clinic to extend the use of this procedure to such cases. This series of 39 fistula repairs includes 19 in selected patients with Crohn’s disease.
Technique and Management

Patients with rectovaginal, anorectal, and rectourethral fistulas require careful preoperative assessment. The exact anatomy of the lesion is determined by examination, under anesthesia where necessary, supplemented by other procedures such as cystourethroscopy in the case of rectourethral fistulas. Frequently the etiology is obvious, being clearly related to a difficult delivery or trauma from an episiotomy. In these cases, the anorectal sphincters must also be assessed for injury. The most common cause of these fistulas in this series was Crohn's disease, usually documented for some time before the appearance of the fistula, but occasionally the fistula will be the presenting symptom. In any case, these patients require thorough assessment of the alimentary tract for active disease elsewhere or macroscopic evidence of proctitis, as these are contraindications to performing transanal repair.

Stomal diversion is usually unnecessary, but preoperative mechanical bowel preparation and antibiotic prophylaxis with metronidazole and a second generation cephalosporin are required. Postoperatively, bowel activity may be limited by constipating drugs or a low residue diet.

Descriptions of the technique of transanal rectal advancement flap repair for rectovaginal fistulas have appeared elsewhere. The prone or Kraske position gives the optimum exposure to the anterior rectal wall. Further access is provided by gentle anal dilatation and anal retractors. Anteriorly, the submucosa of the rectal wall is infiltrated with 1:200,000 epinephrine; a broad-based rectal flap, consisting of mucosa, submucosa, and a part of the circular muscle fibers, is elevated in a cephalad direction for an average of 4 cm (Fig. 1). The apex of the flap incorporates the rectal opening of the fistula and projects beyond this to include healthy tissue distal to the fistula orifice. This portion of the flap is then excised (Figs. 2 and 3). Tracts into the vagina or perineal skin are debrided or excised and the remaining circular muscle fibers are closed over the tract with interrupted absorbable sutures. The vaginal opening of a rectovaginal fistula is usually left open for drainage, but a small mushroom-tipped catheter is often inserted into the external opening of a fistula-in-ano. In the case of a rectourethral fistula, this debridement of the tract into the urethra is not advisable. Finally, the flap is advanced over the site of the tract and anchored in place with several absorbable sutures, usually 00 polyglactin (Fig. 4).

Patients and Methods

Between January 1981 and July 1986, 39 patients with fistulas were managed by transanal rectal advancement flap repair. A retrospective study of these cases was undertaken and follow-up data obtained.

There were 29 women and ten men in the group and their mean age at the time of diagnosis was 38.7 years. This series was comprised of 23 rectovaginal fistulas, 12 fistulas-in-ano, and four rectourethral fistulas. The etiology for each is recorded in Table 1. It is noteworthy that 19 of these fistulas were associated with Crohn's disease that met the standard diagnostic criteria of the disease.

Of the 23 rectovaginal fistulas, the majority were classified as low fistulas, located at or near the dentate line. Two fistulas were located at the level of the anorectal ring and one was located in the rectum at the site of a low colorectal anastomosis performed after external beam