Mucosal Advancement in the Treatment of Anal Fistula

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One hundred eighty-nine patients with anal fistula treated within an eight-month to seven-year period by anal fistulectomy and rectal mucosal advancement are presented. An 80 percent follow-up revealed a 90 percent asymptomatic group and a ten percent group who had minor symptoms. Eight percent of the symptomatic patients had minor soiling; 7 percent were incontinent for gas, and 6 percent were incontinent for loose stools. No patient was incontinent for solid feces. There was a 1.5 percent rate of recurrent anal fistula comparable to other techniques. [Key words: Anal fistula; Treatment; Rectal mucosal advancement; Technique]

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ADEQUATE SURGICAL TREATMENT of anal fistula involves not only cure of the fistula, but also preservation of the normal anatomy and function of the anal canal. A technique that fulfills the necessary criteria and utilizes the technique of rectal mucosa is discussed.

Materials and Methods

One hundred eighty-nine patients who underwent surgical repair of an anal fistula from 1974 through 1981 were reviewed. Patients who had superficial and subtegumentary fistulas or fistulas secondary to inflammatory bowel disease were excluded. Follow-up appraisal was made regarding continence for gas, loose and formed stools, and soiling.

Technique

The fistulous tract is excised protecting the sphincter mechanism and leaving the skin widely saucerized (Fig. 1A). The crypt-bearing tissue around the internal opening of the fistula, as well as the overlying anoderm, is excised (Fig. 1, B-E). A layer of mucosa, submucosa and, frequently, circular muscle is mobilized 4 cm proximally. The internal opening is then closed with 2-0 chromic catgut sutures (Fig. 1, F and G). The mucosal flap is advanced past the internal opening and sutured (also with 2-0 chromic catgut) to the level of the intersphincteric line. The external wound is left open for drainage (Fig. 1, H and I).

Results

Of the 189 patients, 113 were men (60 percent) and 76 were women (40 percent). Ages ranged from 16 to 88 years (mean, 42 years). The most common location was posterior (67 percent). Thirteen patients (7 percent) had one or two prior procedures to repair their fistulas.

Primary fistulectomy with mucosal advancement at the time of incision and drainage was done on 21 patients (11 percent); the other 168 patients (89 percent) had the procedure performed for chronic anal fistula. One hundred fifty-one patients (80 percent) had hemorrhoidectomy in addition to fistulectomy and mucosal advancement. Hospital stay averaged three to four days and healing time averaged six weeks (range, four to 12 weeks).

Two patients had mild degrees of anal stenosis and two additional patients had delayed postoperative bleeding.

Follow-up ranged from eight months to seven years and information was obtained from 151 patients (80 percent). Ninety percent of these patients were completely asymptomatic and 15 (10 percent) had minor symptoms. Of these 15 symptomatic patients, 8 percent had minor soiling, 7 percent were incontinent for gas, and 6 percent were incontinent for loose stools. No patient was incontinent for solid feces.

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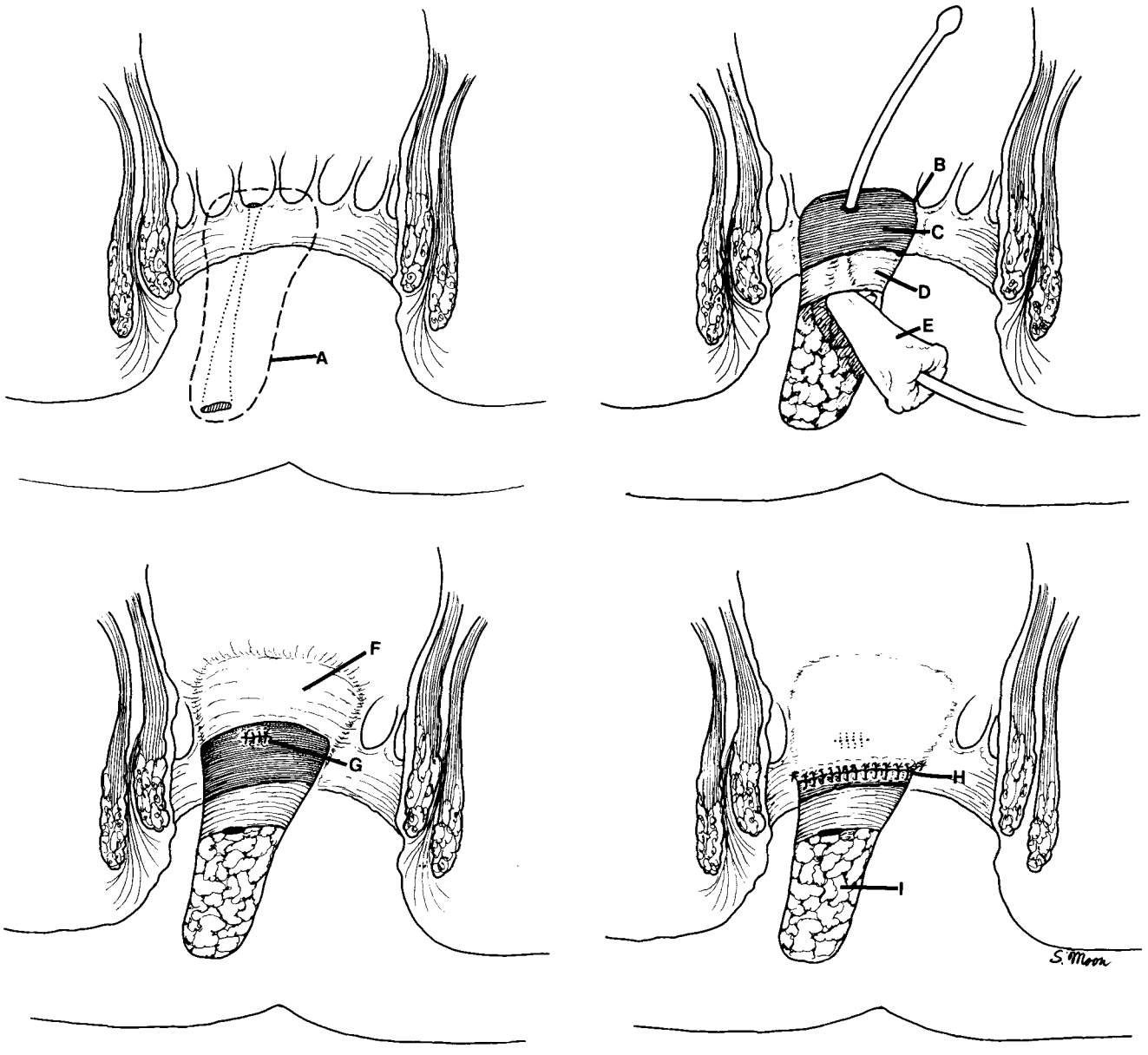

FIGS. 1A–I. A. Excision of skin, anoderm, and overlying crypt-bearing tissue. B. Crypt-bearing tissue excised. C. Internal sphincter. D. External sphincter. E. Probe through fistulous tract. F. Mucosa and submucosa undermined. G. Repair of defect in sphincter. H. Mucosa and submucosa advanced and sutured distal to previous opening of fistula. I. Skin saucerized.

Three had recurrent anal fistulas (1.5 percent). Two of them had a second mucosal advancement performed with satisfactory results and the other patient felt his symptoms did not warrant another operative procedure.

Discussion

Encouraged by the successful report of Gallagher and Scarborough,[1] using the technique of endorectal wall advancement in the treatment of low rectovaginal fistulas, we applied this principle first to the treatment of complicated horseshoe fistulas, to avoid division of sphincter muscle in the midline posteriorly and to prevent the so-called "keyhole deformity." Later on, it was applied to any anal fistula that involved a significant amount of the sphincteric mechanism, such as a fistula that traditionally would have required insertion of a seton. On reviewing the literature, we find that this technique was reported initially in 1902 by Noble[2] for the treatment of rectovaginal fistula. In 1912, Elting[3] reported a similar technique to treat 96 anal fistulas without recurrence. He outlined two cardinal principles as follows: "First: separation of the fistulous tract from the communication with the bowel; and, second: the adequate closure

of that communication with the removal of all the diseased tissue in the rectum."

The majority of our procedures were performed after a chronic anal fistula was found. However, 11 percent of the patients underwent primary fistulectomy with mucosal advancement without significant morbidity, as has been reported by others.[4] We recommend primary fistulectomy only when the internal fistulous opening is identified easily.

All patients who complained of soiling or partial anal incontinence at follow-up were found to have irritable bowel syndrome and were controlled by medical therapy.

Our recurrence rate of 1.5 percent is acceptable and falls in the range reported previously.[5]

Conclusion

We believe that anal fistulectomy with rectal mucosal advancement preserves the anal sphincteric mechanism and decreases the morbidity in patients with high anal fistulas. We recommend this technique in patients with a high anal fistula when the fistula is transphincteric, or in patients who have had prior attempts to repair an anal fistula with damage to the anal sphincter muscle. Also, in some instances, where the location of the internal orifice is uncertain, removal of the crypt-bearing tissue in the suspicious quadrant can be accomplished, improving the chance for cure. Finally, insertion of a seton requiring an associated secondary procedure is avoided.

Summary

One hundred eighty-nine patients with anal fistulas are presented who were treated by anal fistulectomy and mucosal advancement with preservation of the anal sphincter mechanism according to the procedure most recently described by Gallagher and Scarborough for rectovaginal fistula. The recurrence rate was 1.5 percent, comparable with other surgical techniques for anal fistula. Ninety percent had excellent results. Ten percent had minor symptoms of incontinence controlled by diet and anticholinergics. Insertion of a seton is unnecessary, thus avoiding a secondary procedure.

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4. McElwain JW, MacLean MD, Alexander RM, Hoexter B, Guthrie JF. Anorectal problems: experience with primary fistulectomy for anorectal abscess, a report of 1,000 cases. Dis Colon Rectum 1975;18: 646-9.
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