

# Surgical Management of Anorectal Fistulas in Crohn's Disease

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A retrospective review of patients with Crohn's disease treated at our institution from 1973 to 1986 revealed 35 patients operated upon for anorectal fistulas. Twenty-nine had low intermuscular fistulas (multiple in seven), and six had high intermuscular (supralelevator) fistulas. Fistulotomy alone was performed in 19 patients, and eight underwent partial fistulotomy and seton insertion. Five additional patients had proximal fecal diversion before fistulotomy. Three patients with severe colonic and anorectal disease underwent proctocolectomy as the initial procedure. Of the 32 patients who had fistulotomy performed, complete healing occurred in 30. Seven patients who healed required more than one operation for fistula. One patient was left with an asymptomatic fistula, and one required proctectomy for persistent symptomatic fistula and proctitis. Success of operation correlated with absence of rectal disease and quiescent disease elsewhere in the gastrointestinal tract. Aggressive medical treatment is required to control bowel disease preoperatively. In the majority of patients, subsequent surgery is justified and healing can be anticipated. [Key words: Anorectal fistulas; Crohn's disease]

ANORECTAL LESIONS OCCUR frequently in patients with Crohn's disease and cause significant morbidity. The reported incidence varies widely depending on the site of bowel involvement, being much higher with colonic disease.<sup>1</sup> The surgical management of anorectal

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fistulas in these patients is challenging and controversial. Many authors have advocated a conservative approach due to poor surgical results and reportedly benign symptoms. Others have noted satisfactory results of standard operative techniques. Our experience indicates that in selected patients with Crohn's disease, definitive surgery designed to eradicate the fistula can be performed successfully.

## Methods

A retrospective review of 631 patients with Crohn's disease treated at the Ochsner Medical Institutions from 1973 to 1986 was undertaken to identify those patients who had undergone definitive operations for anorectal fistulas. Those who had simple incision and drainage of abscesses were excluded. Thirty-five patients (19 males, 16 females) with anorectal fistulas were operated upon. The diagnosis of Crohn's disease was substantiated in all patients by histologic examination of specimens or by a combination of typical colonoscopic, radiographic, and clinical features. The fistulas were grouped according to the classification proposed by Hanley<sup>2</sup> (Table 1).

## Results

The average age was 30.8 years (range, 16 to 69 years) and duration of Crohn's disease averaged 6.1 years (range, 0 to 17 years) at the time of operation. The fistula was the

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TABLE 1. Hanley's Classification of Anorectal Abscess-Fistula\*

I. Low intermuscular anorectal space
A. Infralevator anorectal spaces
1. Perianal space
2. Subcutaneous anal space
3. Superficial postanal space
4. Superficial anterior anal space
5. Deep postanal space (horseshoe)
6. Deep anterior anal space (horseshoe)
7. Ischiorectal ischioanal spaces
8. Submucosal rectal space
II. High intermuscular abscess
A. Supralevator anorectal spaces
1. Retrorectal space
2. Retrovesical space
3. Pelvirectal spaces
4. Retroperitoneal abdominal cavity space
III. Combined infralevator and supralevator spaces and supralevator pararectal space.

\*Reproduced with permission from Hanley PH. Treatment of anorectal abscess fistula. In: Ferrari BT, Ray JE, Gathright JB Jr, eds. Complications of colon and rectal Surgery: prevention and management. Philadelphia: WB Saunders, 1985:101.

presenting manifestation of Crohn's disease in five patients and preceded diagnosis of intestinal disease by an average of ten months in three of these patients. Two patients developed an anorectal fistula following hemorrhoidectomy performed elsewhere before Crohn's disease was diagnosed. Crohn's disease involved all or part of the large intestine in 25 patients (Table 2). The fistula was classified as low in 29 patients (multiple fistulas in seven) and as high in six (multiple fistulas in one) (Table 3).

Low fistulas were treated by fistulotomy alone in 17 patients and by partial fistulotomy and seton insertion in six. Horseshoe fistulas, present in six patients, were treated by a method previously described by Hanley and associates in which a fistulotomy to open the postanal space is combined with partial excision or curettage of the fistula tracts.<sup>2,3</sup> Three patients had fecal diversion performed, with or without intestinal resection, followed by fistulotomy. Three patients with severe colonic and anorectal disease underwent proctocolectomy as the initial procedure.

Complete healing was achieved in 25 of 26 patients who had fistulotomy performed (Table 4). Four patients who healed required more than one operation for fistula, generally due to inadequate drainage of a chronic abscess. Healing time averaged 5.5 months in 24 patients and the other required three operations over an eight-year period before complete healing occurred. The only patient who failed to heal has had a persistent indolent fistula for 10 years.

Long-term follow-up of these patients (Tables 4 and 5) reveals that two developed recurrent fistulas one and eight

TABLE 2. Site of Intestinal Involvement in Patients with Perianal Fistulas

Small bowel only	10 (29%)
Small and large bowel	12 (34%)
Rectum involved	8
Rectum not involved	4
Large bowel	10 (29%)
Rectum involved	7
Rectum not involved	3
Anus only	3 (8%)
TOTAL	35

years, respectively, after initial healing. Both were treated successfully with fistulotomy. Two patients subsequently required proctectomy for symptomatic anorectal stricture and uncontrolled proctitis 10 months and 12 years, respectively, after initial healing. One patient required proctocolectomy two years after healing due to persistent ileocolic disease and a colonic stricture. None of the patients who required proctectomy had developed recurrent fistulas in the interim.

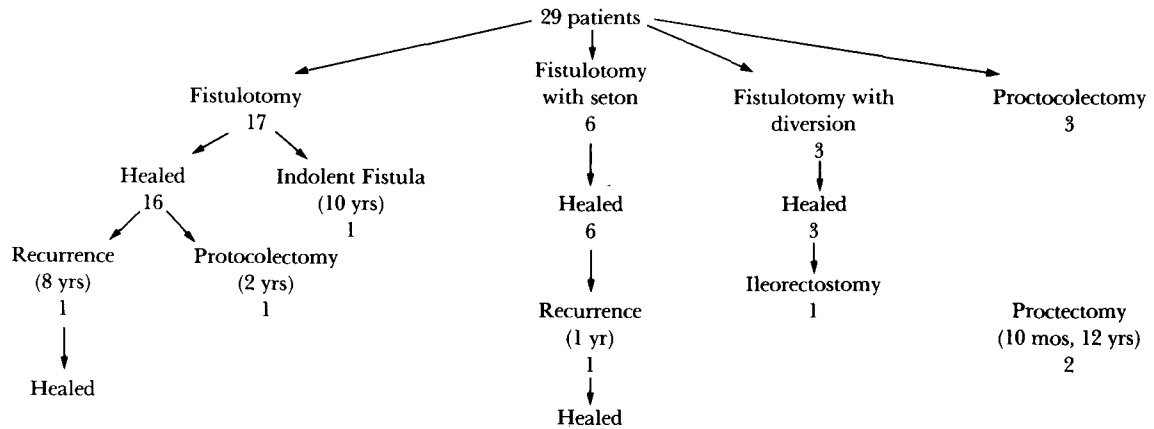
High fistulas (Table 6) were treated by fistulotomy alone in two patients, with complete healing (average 2.5 months) and no recurrence in 10-year follow-up. Two patients had partial fistulotomy and seton insertion. Both healed, although a total of five operations were required over 4.5 years and 6.5 years, respectively. There has been no recurrence with 3.5 to 5.5 year follow-up. One patient with a retrorectal supralevator abscess-fistula required multiple operations including intestinal resection over a 67-month period but ultimately healed and had restoration of intestinal continuity. He remains well one year later. The other patient underwent ileostomy followed by fistulotomy but required proctectomy because of severe uncontrolled anal disease.

Of the seven patients with anorectal fistulas who ultimately had proctectomy performed, the perineal wounds were closed primarily in five. Prompt healing occurred in two patients, neither of whom had active anal disease.

TABLE 3. Classification of Anorectal Fistulas

I. Low intermuscular	
Perianal space	12
Superficial anterior anal space	2
Deep postanal space (horseshoe)	11 (6)
Deep anterior anal space	3
Submucosal rectal space	1
TOTAL	29
II. High intermuscular (supralevator)	
Retrorectal space	2
Pelvirectal space	1
III. Combined intralevator and supralevator spaces	3
TOTAL	6

TABLE 4. Treatment and Outcome of Low Anorectal Fistulas



Two patients with severe rectal disease healed 5 months and 19 months postoperatively. One patient has a persistent perineal sinus ten months postoperatively. Two patients whose perineal wounds were left open due to severe perianal suppuration have not achieved complete healing in 6.5 and 9 years, respectively (Table 5).

### Discussion

Controversy exists over the proper role of surgery in the management of perianal fistulas in Crohn's disease. Conservatism is advocated by some due to fear of poor wound healing, risk of sphincter injury, and the benign nature of fistulas, which may heal spontaneously or become asymptomatic.

Alexander-Williams and colleagues of Birmingham, England, reviewed the natural history of 109 patients with perianal Crohn's disease followed over a 10-year

period and noted a high rate (38 percent) of spontaneous healing of anal fistulas.<sup>4,5</sup> Nine percent of their patients required proctectomy during this period, only half for perianal disease. They advocated a conservative approach due to the benign course of perianal disease and the risk of incontinence by surgical intervention. Wolff *et al.* agree with this approach, although they recommend simple fistulotomy for perianal fistulas that do not involve a significant amount of sphincter muscle.<sup>6</sup> Allan and Keighley reported that laying open of a low fistula achieved healing in only one of twelve patients and that six patients developed impairment of continence afterward.<sup>7</sup> They concluded that there are few indications for fistulotomy in such patients. In their series of 12 patients with high fistula, seven required proctectomy.<sup>7</sup> A high rate of proctectomy for high fistulas has been noted in other reports.<sup>8,9</sup>

TABLE 5. Outcome of Anorectal Fistulas According to Site of Bowel Involvement

	Initial Outcome				Long-term Outcome			
	Healed	Proctectomy	Unhealed	Total	Healed	Proctectomy	Unhealed	Total
Small bowel only	10			10	10			10
Small and large bowel								
Rectum involved	5	2	1	8	3	4	2*	8
Rectum not involved	4			4	4			4
Large bowel only								
Rectum involved	5	2		7	4	3	2*	7
Rectum not involved	3			3	3			3
Anus only	3			3	3			3
TOTAL	30	4	1	35	27	7	4*	35

\*Includes perineal wound after proctectomy.

TABLE 6. Treatment and Outcome of High Fistulas

	Number	Outcome
Fistulotomy alone	2	Healed
Fistulotomy with seton	2	Healed (multiple operations)
Diversion plus fistulotomy	1	Proctectomy
Diversion plus fistulotomy and bowel resection	1	Healed (multiple operations) Coloproctostomy

We, like others, favor a more liberal use of definitive surgical treatment for symptomatic fistulas. The experience from St. Mark's Hospital supports the use of fistulotomy in selected patients.<sup>8,10</sup> Lockhart-Mummery advocated laying open of low fistulas, noting that the wounds healed "slowly but soundly."<sup>10</sup> Marks and colleagues treated 32 patients with low fistulas by fistulotomy, with successful healing in 25.<sup>8</sup> A high rate of healing without undue delay has also been reported by Sohn *et al.* (75 percent),<sup>11</sup> Hobiss and Schofield (70 percent),<sup>12</sup> and Bernard *et al.* (63 percent).<sup>13</sup> Lockhart-Mummery, however, cautions against laying open horseshoe fistulas and division of any sphincter muscle during drainage of abscesses.<sup>14</sup> In our series, all six patients with horseshoe fistulas so treated, healed. In general, we agree that acute abscesses should be treated with simple incision and drainage rather than by fistulotomy. No significant impairment of continence following fistulotomy was noted in any patient in our series.

A notable feature of the present series is the outcome of patients with high fistulas. Only one of six patients required proctectomy after failed fistulotomy. The remaining five patients healed, although multiple operations over several years were required in three.

Most authors have reported better results of fistula surgery when there is no active disease in the colon and rectum.<sup>6,12,15</sup> Other authors have reported no influence of resection of diseased bowel<sup>8</sup> or the presence of active bowel disease<sup>5,16</sup> on healing of anal lesions as long as the rectum is not involved. Our results indicate that healing of anorectal fistulas is less likely in the presence of active intestinal disease, particularly rectal involvement. Of the ten patients with active intestinal disease present at the time of fistulotomy, five required proctocolectomy, one has a persistent fistula, one healed only after resection of the diseased ileum, and two healed only after medical control of intestinal disease. Also, those who developed recurrent fistulas did so with flares of their intestinal disease. All ultimate surgical failures occurred in patients with rectal involvement (Table 5). This emphasizes the fact that definitive fistula surgery should be undertaken only after maximal medical control of intestinal disease,

particularly rectal disease.<sup>12,15,17</sup> However, our results do not support the statement by Hellers *et al.* that the combination of rectal Crohn's disease and anal fistula invariably leads to proctocolectomy.<sup>17</sup>

Proximal fecal diversion alone has not been beneficial in anorectal Crohn's disease.<sup>6,14</sup> Our study does not support the use of preliminary fecal diversion for most anorectal fistulas. The fact that poor results were obtained in patients who underwent diversion in our series probably reflects more aggressive disease in these patients.

Other than rectal involvement and active intestinal disease, factors that had an adverse effect on healing in our series included associated anorectal complications, particularly stricture.<sup>13,15</sup> Two of three patients who required proctectomy subsequent to successful healing had anorectal stenosis, and none had recurrent fistulas. Previous fistula surgery did not preclude successful operation for recurrent fistulas. This study also demonstrates that high fistulas can often be treated successfully.

Metronidazole shows promise in the medical management of patients with anorectal complications of Crohn's disease.<sup>18,19</sup> It was used at some time during the course of treatment in 13 of our patients. Although we recommend its use, no statement concerning its beneficial effect on the clinical course of our patients can be made at present.

In summary, we recognize that operative treatment is justified in many patients with perianal fistulas associated with Crohn's disease. Primary fistulotomy should be avoided at the time of drainage of acute perianal abscesses. Patients with symptomatic fistulas require aggressive medical treatment to control their intestinal disease preoperatively, including metronidazole. Most fistulas can be surgically treated with satisfactory results. The use of setons should be considered in patients with complex fistulas. In the absence of active rectal disease and associated anal complications, a successful outcome can be achieved in the majority of patients.

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