Chapter 25
My Fistulas Are Just Not Healing. What Are You Going to Do About It? Surgical Management of Perianal Crohn's Disease

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Suggested Response to the Patient

The management of fistulas largely depends on the extent of the fistula and the degree of inflammation and infection present. If a large infected fluid collection is present, this is usually drained in the operating room prior to any other intervention. Treatment with antibiotics is also common. At times, a drain called a seton is placed to keep the fluid collection from reforming. It is also important to assess both the internal and external opening of the fistula and the path of the tract between them in order to determine the best treatment option. This may be accomplished by an exam under anesthesia or other radiologic studies such as an MRI or an ultrasound study. The degree of inflammation from Crohn's disease present in the rectum and anus must also be assessed.

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If inflammation is present, medical therapy is utilized first with the hopes of improving the degree of inflammation and promoting spontaneous closure of the fistula.

If there is no rectal inflammation, a surgical option may be possible. If the tract between the internal and external opening is superficial, a fistulotomy, opening of the tract, may be performed. In the case of a more complicated fistula without rectal inflammation, it may be possible to close off the internal opening with a flap of healthy rectal tissue; this is commonly done to treat a rectovaginal fistula. In many cases, however, the fistula tracts are complex and multiple and long-term use of draining setons is the preferred method of treatment. Setons are usually well tolerated and keep painful, infected fluid collections from forming. In the most severe cases of perianal fistulas and infections secondary to Crohn's disease, a temporary or permanent ostomy, where the stool is passed out of the intestine and through the abdominal wall into a bag, is required.

Brief Review of the Literature

The management of anal fistulas is challenging and is based upon the patient's presentation considering the fistula's location and complexity, the presence or absence of rectal inflammation, and the severity of accompanying anal canal disease [1]. In general, a conservative surgical approach is adopted because a more aggressive attitude often results in outcomes that are worse than the disease itself. Proper evaluation for perianal fistulas includes physical examination, an examination under general anesthesia, and possible pelvic imaging including MRI, CT scan imaging, and/or endoscopic or endorectal ultrasound imaging [2]. These techniques help define the precise extension of the disease and are needed to rule out complications such as abscesses. Adequate diagnosis has been obtained in 100 % of cases when the evaluation included pelvic MRI and examination under anesthesia or when either of these techniques was combined to endorectal ultrasounds [3]. Once the anatomy of the fistula tract and the

presence or absence of rectal inflammation have been determined, appropriate therapy can be outlined.

Surgery will eventually be required in 20–80 % of Crohn's disease patients with perianal fistulas [4–7] and about 30 % of patients with complicated perianal Crohn's disease may eventually require a permanent stoma [8, 9]. Surgical therapy has to be tailored to each case, but the overall goal of surgery should be to cure the fistulas without damaging sphincter function. If inflammation is present, surgical therapy should be aimed at draining abscesses and placing non-cutting setons to control sepsis and prevent recurrent abscess formation. The seton does delay fistula healing and closure, but medical therapy, including immunomodulators, may be given while a seton is in place. One strategy is to place setons in patients with known fistulas who are about to start therapy with infliximab, specifically for the prevention of an abscess while on therapy [10]. Setons are well tolerated by most patients and they cause no long-term harm. Patients who have responded well to infliximab will generally have the seton removed, which can be done easily and painlessly in the physician's office. After removal of the seton, medical therapy should be continued.

In the absence of rectal inflammation, more surgical options exist. Low perianal fistulas in patients without rectal inflammation can be treated by fistulotomy, with reported healing rates of 80 % or more. Another option is to use a rectal advancement flaps to cover the internal opening of the fistula. This technique is commonly used in the treatment of rectovaginal fistulas. In two studies, initial healing rates with advancement flaps were 71–89 %, but with recurrence rates of 34–63 % during subsequent follow-up [11–13].

More recently described procedures for the management of fistulas in adults with Crohn's disease entail occlusion of the fistula tract with a fibrin sealant [14] or collagen plug [15]. Results with a fibrin sealant for fistulas related to Crohn's disease have been inconsistent partially because complex fistulas tend to be less responsive to treatment, but the largest series to date revealed that more than one-half of treated fistulas remained drainage-free after nearly two years of follow-up [14]. Similar to the fibrin sealant experience, some centers

[16] have reported high success rates (>80 %) in patients with fistula tracts treated by collagen plug occlusion while others [15] have encountered somewhat discouraging outcomes.

Patients with severe perianal Crohn's disease or complications may benefit from a diverting colostomy or ileostomy. Some are able to subsequently heal enough to have the ostomy reversed; however, the risk of the ostomy becoming permanent is significant. Less than one-quarter of individuals have intestinal continuity restored [17]. Diversion is especially useful for the treatment of refractory infectious complications (cellulitis, recurrent abscesses, destructive deep infections) but sometimes disappointingly ineffective at reducing the progression of the inflammatory and fibrotic aspects of the disease (fissures, fistulas, or strictures) [16]. Patients with minimal colitis can have a sigmoid (left lower quadrant) colostomy, whereas others will require an ileostomy (right lower quadrant). Patients who have complete resolution of their perianal Crohn's disease or manageable sequelae (skin tags, epithelialized chronic fistulas) can be considered for ostomy closure, but this is typically only a consideration after 6–12 months. The majority of patients who undergo successful closure of their stoma require a secondary procedure (e.g., rectal mucosal advancement flap) to achieve stoma closure. This type of patient should also be warned about the high likelihood of recurrent symptoms and the possible need for another diversion. Ultimately, an endoanal proctectomy with end ostomy is necessary in approximately 5 % of Crohn's disease patients solely to control perianal disease, especially if high, complex fistulas, deep ulcerations, colonic disease, or anal canal stenosis is present.

Perianal manifestations of Crohn's disease can be a frustrating and painful, with significant deleterious effects on the patient's self-image and quality of life. Like all Crohn's disease, treatment is primarily medical. Surgical intervention, although rarely curative, is useful for the assessment of the extent of disease and helping to manage complications. The goals of the surgeon should be to control sepsis, relieve discomfort, and help maintain good function so that patients with the disease can have a normal lifestyle and avoid long-term complications.

References

1. Williamson PR, Hellinger MD, Larach SW, Ferrara A. Twenty-year review of the surgical management of perianal Crohn's disease. Dis Colon Rectum. 1995;38(4):389–92.
2. Spradlin NM, Wise PE, Herline AJ, Muldoon RL, Rosen M, Schwartz DA. A randomized prospective trial of endoscopic ultrasound to guide combination medical and surgical treatment for Crohn's perianal fistulas. Am J Gastroenterol. 2008;103(10): 2527–35.
3. Schwartz DA, Wiersema MJ, Dudiak KM, Fletcher JG, Clain JE, Tremaine WJ, et al. A comparison of endoscopic ultrasound, magnetic resonance imaging, and exam under anesthesia for evaluation of Crohn's perianal fistulas. Gastroenterology. 2001;121(5):1064–72.
4. Schwartz DA, Loftus Jr EV, Tremaine WJ, Panaccione R, Harmsen WS, Zinsmeister AR, et al. The natural history of fistulizing Crohn's disease in Olmsted County, Minnesota. Gastroenterology. 2002;122(4):875–80.
5. Ba'ath ME, Mahmalat MW, Kapur P, Smith NP, Dalzell AM, Casson DH, et al. Surgical management of inflammatory bowel disease. Arch Dis Child. 2007;92(4):312–6.
6. Fichera A, Michelassi F. Surgical treatment of Crohn's disease. J Gastrointest Surg. 2007;11(6):791–803.
7. Gupta N, Cohen SA, Bostrom AG, Kirschner BS, Baldassano RN, Winter HS, et al. Risk factors for initial surgery in pediatric patients with Crohn's disease. Gastroenterology. 2006;130(4): 1069–77.
8. Loffler T, Welsch T, Muhl S, Hinz U, Schmidt J, Kienle P. Long-term success rate after surgical treatment of anorectal and recto-vaginal fistulas in Crohn's disease. Int J Colorectal Dis. 2009; 24(5):521–6.
9. Mueller MH, Geis M, Glatzle J, Kasparek M, Meile T, Jehle EC, et al. Risk of fecal diversion in complicated perianal Crohn's disease. J Gastrointest Surg. 2007;11(4):529–37.
10. Kamm MA, Ng SC. Perianal fistulizing Crohn's disease: a call to action. Clin Gastroenterol Hepatol. 2008;6(1):7–10.
11. Hyman N. Endoanal advancement flap repair for complex anorectal fistulas. Am J Surg. 1999;178(4):337–40.
12. Makowiec F, Jehle EC, Becker HD, Starlinger M. Clinical course after transanal advancement flap repair of perianal fistula in patients with Crohn's disease. Br J Surg. 1995;82(5):603–6.

13. van der Hagen SJ, Baeten CG, Soeters PB, van Gemert WG. Long-term outcome following mucosal advancement flap for high perianal fistulas and fistulotomy for low perianal fistulas: recurrent perianal fistulas: failure of treatment or recurrent patient disease? Int J Colorectal Dis. 2006;21(8):784–90.
14. Vitton V, Gasmi M, Barthet M, Desjeux A, Orsoni P, Grimaud JC. Long-term healing of Crohn's anal fistulas with fibrin glue injection. Aliment Pharmacol Ther. 2005;21(12):1453–7.
15. Safar B, Jobanputra S, Sands D, Weiss EG, Nogueras JJ, Wexner SD. Anal fistula plug: initial experience and outcomes. Dis Colon Rectum. 2009;52(2):248–52.
16. O'Connor L, Champagne BJ, Ferguson MA, Orangio GR, Schertzer ME, Armstrong DN. Efficacy of anal fistula plug in closure of Crohn's anorectal fistulas. Dis Colon Rectum. 2006; 49(10):1569–73.
17. Yamamoto T, Allan RN, Keighley MR. Effect of fecal diversion alone on perianal Crohn's disease. World J Surg. 2000;24(10): 1258–62. Discussion 1262–3.