



Management of Perianal Crohn's Disease

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Most patients with perianal Crohn's disease are asymptomatic and perianal disease may resolve given adequate medical treatment for the underlying intestinal lesion. This will consist principally of sulphasalazine and prednisolone, both of which are known to be effective in the treatment of Crohn's disease. Should the local perianal disease become more severe, a trial of oral metronidazole may be worthwhile. The development of an ischiorectal or perianal abscess is an indication for the simplest surgical drainage procedure, and rectal strictures resulting from the healing of perianal fissures may be gently dilated. Further progression of disease may be treated by diversion of the fecal stream, but this will stand a greater chance of success in patients without florid rectal Crohn's disease. Fecal diversion is also indicated as a preliminary to the repair of rectovaginal fistulas. Patients with florid perianal Crohn's disease and severe anorectal disease will probably come to proctocolectomy, but initial defunctioning of the colon will make the operative procedure easier, may facilitate perineal healing, and some patients may actually avoid proctectomy with its high risk of a persistent perineal sinus.

In patients with Crohn's disease, perianal problems are common. Such lesions may precede the appearance of proximal gastrointestinal Crohn's disease by as much as 22 years [1]. They occur more commonly in association with colonic than with small bowel disease [2, 3], but the exact incidence of perianal Crohn's disease is difficult to assess because estimates vary widely between series. An incidence of between 20% and 80% is reported for perianal disease in Crohn's patients [3-5], the problem being to decide what *does* and what *does not* constitute perianal Crohn's disease. Some series count only symptomatic disease [6], some include cases with skin tags [7], while others do not [8]. The observed variations in frequency are probably due to such considerations than to genuine differences in the incidence of perianal disease between series. The perianal lesions of Crohn's disease are often asymptomatic, but they can become both painful and disabling and may require energetic treatment.

The treatment of any pathological condition is helped by an understanding of its etiology, but the cause of Crohn's disease remains unknown. Insofar as development of perianal complications of this condition is concerned, it is suggested by Hughes and Jones [9] that they take their origin in certain primary lesions which occur in relation to the anorectal mucosa. These primary lesions include mucosal fissures, ulcerated edematous

piles, and cavitating ulcers. Fissuring of the anal margin heals by fibrosis and may subsequently produce the anal stenosis which is commonly seen in these patients [10]. Some edematous piles resolve to form skin tags, but it is the cavitating ulcers which progress to cause the majority of the tissue destruction. These ulcers penetrate through the full thickness of the rectal mucosa, spreading sepsis into the perirectal tissues. Their propensity to spread through the rectal musculature might partly be due to obstruction to onward flow of rectal contents by the anal sphincters. This may encourage fecal material under pressure to discharge down the perirectal tracts. Once outside the wall of the anorectum, sepsis may spread for quite long distances before emerging on the perianal skin to form a fistula. If such a fistula tract becomes obstructed, extensive anorectal sepsis may result.

Such a pathological sequence of events seems dire, and certainly perianal Crohn's disease can look alarming; however, the temptation to treat alarming appearances with aggressive surgery must be resisted if the situation is not to be made worse by iatrogenic morbidity. Careful studies of the natural history of perianal Crohn's disease reveal that it is surprisingly indolent. Of particular interest in this respect are the 109 patients reported by Fielding to have perianal Crohn's disease in 1968 [8]. Patients with skin tags alone were excluded from this study and only those patients with either a definite fistula or fissure were included. This same group of patients was reexamined in 1978 to determine the outcome of the perianal Crohn's disease. During follow-up, 10 of the original patients in the study came to proctectomy, although in only five was this done directly because of perianal disease. Fourteen patients died from coincidental causes or from complications of Crohn's disease. Twenty-four were completely asymptomatic but refused to be reassessed proctologically in 1978. This left 61 patients whose perianal Crohn's disease was thoroughly evaluated both in 1968 and then again in 1978 [11]. Of 54 patients with an anal fissure in 1968, 17 had healed spontaneously by 1978. In 27 further patients the anal fissures had healed, but with some minor degree of narrowing of the anal canal. Two patients with no fissure at the beginning of the study developed one over the follow-up decade. In 1968, 21 of the patients had an anal fistula. Eight, who had no surgical treatment, healed spontaneously. Seven were treated surgically by laying open a low fistula, but one of these recurred. The remainder with fistula were

unhealed, but since they were asymptomatic, no operative intervention was necessary. These findings underline the generally benign nature of perianal Crohn's disease. When planning treatment for such lesions it must be against the background of a strong tendency for spontaneous resolution of the lesion and the risk of incontinence by surgical intervention [12].

Medical Treatment for Perianal Crohn's Disease

Before any form of treatment is started, it is important to establish the diagnosis of the lesion as accurately as possible. Any anal lesion in a patient known to be suffering from Crohn's disease is likely to be perianal Crohn's disease; however, if the perianal disease is the first manifestation, as is the case in 30% of our patients, diagnosis may be more difficult. In this situation, the clinician may erroneously consider the perianal disease to be a nonspecific lesion. The relative lack of pain, multiplicity of the lesions, or the undermined nature of the fissures on the lateral margin of the anus may, however, alert the observer to the fact that the condition is, indeed, perianal Crohn's disease. A further criterion for differentiation may be a visually active proctitis at sigmoidoscopy. Biopsy of the rectal mucosa together with similar biopsies of any skin tag or fistula track may allow a firm histological diagnosis to be made. Other conditions which may be confused with perianal Crohn's disease include tuberculosis, venereal proctitis, bilharziasis, and hydradenitis suppurativa. Leukemia or myeloma should be considered in seriously ill patients with sudden unexplained florid perianal disease.

There is evidence that perianal lesions may heal if active Crohn's disease elsewhere in the gut is successfully treated [13, 14]. Such treatment may include resection of a proximal lesion. For example, Heuman et al. [2] found that, in a series of 15 patients with perianal lesions before a resection for more proximal Crohn's disease, 80% of the perianal lesions healed following the operation [2]. Similar results are reported by Hellers et al. [15], who found that 47% of their patients with anal fistula healed spontaneously after intestinal resection. There are no prospective, controlled trials of drug therapy in perianal Crohn's disease alone; but bedrest, correction of fluid depletion, as well as administration of sulphasalazine [4, 16–18] and methylprednisolone [4, 16, 17] are known to be an effective treatment for Crohn's colitis. The immunosuppressive drugs azothiaprime and its metabolite, 6-mercaptopurine, are also effective in the treatment of colonic Crohn's disease. There is some evidence that they may be useful in healing perirectal fistulas [18, 19]. Against this, the National Cooperative Crohn's Disease Study (NCCDS) in the United States did not find azothiaprime of value in healing Crohn's disease [16]. This difference may be due in part to the shorter follow-up period in the NCCDS compared with the studies of Brooke et al. [18] or Present et al. [19].

There is mounting evidence that antibiotics are effective in controlling perianal Crohn's disease. In 1977, Allan and Cooke reported striking improvement in 2 patients with perianal Crohn's disease treated by metronidazole [20], and this report was followed by further studies [21, 22]. In that of Brandt and colleagues [22], 26 patients with perianal Crohn's disease were treated with 20 mg/kg per day metronidazole orally. Ten patients progressed to complete healing of their perianal disease

while on the drug, and the remaining 16 patients underwent partial healing. Unfortunately, the drug was required for many months and, in 1 case, for 3 years. Such prolonged treatment was associated with paresthesia in 50% of patients, and this developed a mean of 6 months after onset of treatment. Most paresthesia was bilateral and pedal; however, in our own study, the response to metronidazole was disappointing [23].

Further evidence that Crohn's colitis might respond to metronidazole therapy is provided by the trial carried out by Ursing et al. [24], who demonstrated that oral metronidazole therapy was as effective in controlling Crohn's colitis as was sulphasalazine. A prospective, randomized, crossover trial of metronidazole therapy in Crohn's disease [25] showed clinical improvement in 6 patients with Crohn's colitis, but not in a further 16 patients with small bowel disease. How metronidazole brings about this improvement is uncertain. It seems likely that it exerts its action through its antimicrobial effect on the bowel microflora and as a systemic antibiotic. Ursing and his colleagues [24] found that metronidazole reduces the *Bacteroides* content of the colon after only 1 week, and this often lasted until the drug was stopped. Beside its antimicrobial effect, metronidazole is known to influence leukocyte chemotaxis [26] as well as being an immunosuppressive agent [27], either or both of which actions could contribute to its efficacy.

Direct Surgical Treatment for Perianal Crohn's Disease

The potential benefits of local surgical treatment for perianal Crohn's disease must be carefully weighed against the possibility of spontaneous resolution of these complications. A recent study from The General Hospital, Birmingham, United Kingdom [12] reviewed 202 patients with Crohn's disease attending the follow-up clinic. Their notes were examined to assess evidence of perianal Crohn's disease at some time during their previous illness. The most common manifestation (in 75 patients) was skin tags. Most of these were asymptomatic and had disappeared by the time of review in 1984. There were 38 patients with documented evidence of a fissure-in-ano, but 29 of these had also disappeared spontaneously by the time of review. Low-lying fistula-in-ano had been present in 40 patients, but 14 had spontaneously resolved on review. Thirteen were still present but caused little trouble, while 10 patients with a low fistula required proctectomy. Twelve patients with a high fistula-in-ano were identified, of whom 7 had come to proctectomy and the remaining 5 had troublesome symptoms. A similar pattern was observed in 6 patients with a rectovaginal fistula, 4 of whom had come to proctectomy by the time of review. Thus, there is good evidence that perianal lesions in Crohn's disease have a strong tendency to spontaneously remit, as was also previously shown by Buchmann et al. [11].

Of the patients in the recent series from Birmingham [12], only a small number were subjected to direct operative treatment for their perianal disease. In those who did come to surgery, there was a high incidence of complications together with little clinical benefit. Gentle anal dilatation achieved healing in only 4 of 7 patients with a fissure and 1 patient was rendered temporarily incontinent of feces afterward. Laying open of a low fistula-in-ano achieved healing in only 1 of 12 fistulas, but 6 developed impairment of continence afterward. This finding is in contrast with a report from St. Mark's

Hospital, which reports on 32 low fistulas treated along conventional lines, 25 of which healed successfully [28]. No patient with a high fistula was treated by local surgery; the majority were advised to undergo a proctectomy. It is also of great interest to note that the presence of perianal disease has a marked effect on the healing of proctectomy wounds after rectal excision. Of 27 patients with perianal disease who came to proctectomy, 19 were associated with a persistent perianal sinus, compared with complete perianal healing in all patients undergoing a rectal excision in the absence of perianal disease [12].

The most pressing indication for local surgery for perianal Crohn's disease is the drainage of a perianal or ischioanal abscess. This is a surgical emergency like other forms of pyogenic abscess. If an abscess is drained and a fistula results, then, unless this is very low and symptomatic, there is no further indication for surgery.

Low anal fistulas in perianal Crohn's disease are often asymptomatic and many heal spontaneously. There are few indications to lay them open, but if a subcutaneous fistula is associated with an abscess in the absence of active proximal disease, it is relatively safe to lay it open while draining the abscess. Some surgeons recommend the use of partial internal sphincterotomy [29, 30] for low intersphincteric fistula. We have not found this to be a useful operation in perianal Crohn's disease. Patients with a high fistula and perianal Crohn's disease often come to proctectomy [12, 28]. This is because such fistulas often arise in the rectum as a result of cavitating ulceration. Enterovaginal fistulas may occur in association with perianal Crohn's disease. Givel and colleagues [31] report their experience of 13 such fistulas. Seven came to proctectomy, with perineal healing in 5 and a persistent vaginocutaneous fistula in one. In a further 2 patients, attempts at local repair of the fistula without a covering colostomy were unsuccessful. In a further patient, a local repair of the rectovaginal fistula was successful when this was performed following creation of a proximal loop ileostomy. The ileostomy was subsequently closed with no ill effects. One further patient developed an adenocarcinoma of the fistula track after 10 years of medical treatment. Provided the patient does not require a proctectomy for coincidental severe rectal disease, a local repair of the rectovaginal fistula should be attempted following creation of a proximal loop ileostomy. Very low anovaginal fistulas may be safely laid open.

On the current available evidence, anal fissures, which are often painless, usually heal spontaneously. They do not, therefore, require surgical treatment. During the healing process, they may produce some degree of fibrosis with consequent anal narrowing. Such narrowing is of short length and usually responds well to gentle dilatation with bougies. These short superficial strictures are in contrast to the long, craggy, fibrous anorectal strictures that sometimes occur as a consequence of cavitating ulceration of the anorectum in Crohn's proctitis. Such strictures may respond to balloon dilatation [32], but more commonly require a proctectomy if they become symptomatic [33].

Coexisting hemorrhoids are not common in patients with perianal Crohn's disease [10], and their treatment in patients with active disease is not to be recommended. In one study, 6 of 20 patients with hemorrhoids and active Crohn's disease who

underwent treatment for their hemorrhoids came to proctectomy for complications apparently dating from the treatment of their piles [34].

In summary, the indications for local surgery in perianal Crohn's disease are limited to the drainage of pus, the gentle dilatation of short low strictures, and a very occasional laying open of a symptomatic low anal fistula. Some enterovaginal fistulas should also be repaired; but if so, a preliminary loop ileostomy should be established. A large proportion of these patients have few symptoms, and, in our opinion, the fistula should be left alone.

Reduction or Diversion of Fecal Stream

Whether reducing or diverting the fecal stream has a place in the management of intractable perianal Crohn's disease remains debatable. It is possible to achieve this effect in either of 2 ways. One is to use an elemental diet to treat acute exacerbations of Crohn's disease with the object of reducing the amount of the fecal stream. Most reports do not specifically mention the effect of such diets on perianal manifestations, but the method was shown to be as effective in the treatment of large and small bowel Crohn's disease as prednisolone [35], and remission can be accomplished more rapidly when an elemental diet is combined with a nonabsorbable antibiotic [36]. Elemental diet remains of theoretical value for the treatment of perianal disease, but as yet not much information is available concerning its therapeutic efficacy.

The alternative is to use a loop- [37] or split-ileostomy [38] to defunction the colon. This method has been extensively employed in treating Crohn's colitis, and some information is available concerning its effect on perianal Crohn's disease. The 2 largest series of patients with Crohn's colitis treated by this technique are those from Oxford [39] and from the Cleveland Clinic [40]. The Oxford group has shown that, of 102 patients with Crohn's colitis treated by a split-ileostomy, 25% relapsed while the colon was defunctioned and a further 25% once the ileostomy was closed [41]. The 102 patients included 29 with symptomatic perianal Crohn's disease at the time of fecal diversion. Eleven of 19 patients with fistulas-in-ano improved with diversion: 6 healed partially, and 5 healed completely. In addition, 12 women had rectovaginal fistulas; of these, 5 persisted but remained asymptomatic, and 2 healed spontaneously following defunctioning (one of which relapsed when the ileostomy was closed). A further 5 healed after local surgery while the colon remained defunctioned, and, of these, 2 relapsed when the ileostomy was closed. Overall, the perianal disease improved or healed after 23 (72%) of split ileostomies. The best response to diversion appeared to be in patients without rectal involvement and whose intestinal disease was quiescent. Harper et al. [39] also noted that the reduction in inflammation and improvement in the state of the perineum after defunctioning greatly facilitated the perineal dissection in patients requiring proctectomy. Furthermore, it has been shown that healing of the perineal wound was less certain following proctectomy in patients with Crohn's proctitis who also have a high fistula-in-ano or a rectovaginal fistula [42].

Zelas and Jagelman [40] reviewed the results of a loop ileostomy in 79 patients with severe Crohn's colitis or ileocolitis. Twenty-three had severe perianal Crohn's disease at the

time of operation, and 22 of them improved following the diversion of the fecal stream as assessed by clinical and serological parameters. Six have remained well since with an ileostomy alone on a follow-up of 3–5 years; 9 required definitive surgery at a mean time of 9 months following ileostomy formation; and 6 had a relapse of symptoms requiring definitive surgery 11 months after ileostomy formation. Other smaller series of patients treated by defunctioning ileostomy for perianal Crohn's disease testify to the value of this method of management [43, 44]. Not all surgeons agree [2], however, and several reports of the application of defunctioning ileostomy (primarily to treat Crohn's colitis, but including some patients with perianal disease as well) have revealed disappointing results. For example, the series of Berman et al. [45] included 10 patients with perianal Crohn's disease, of whom 2 had a fissure-in-ano, 7 a fistula-in-ano, and 1 both these complications. After diversion over a mean follow-up period of 25 months, all the fissures healed, but only 1 fistula healed. A rectal stricture developed in 3 patients while defunctioned (a complication also noted by other surgeons [41]), and in 1 case, this was the main indication for a subsequent proctectomy. Four further patients developed perianal Crohn's disease following defunctioning. McIlrath reports similar disappointing results with only 4 patients of 10 showing any improvement of their perianal Crohn's disease following fecal diversion, and in a further 4 cases, worsening of the anorectal disease led to proctectomy [46]. It is, unfortunately, too early to report on our own experience of fecal diversion alone for perianal disease.

Management of Complications of Perianal Crohn's Disease

The most serious complications of perianal Crohn's disease are incontinence of feces or the development of carcinoma. Alexander-Williams [47] has reported 16 patients with incontinence of feces subsequent to perianal Crohn's disease. Six of these patients were completely incontinent of feces and 10 were incontinent only when they had diarrhea. Four of the less severe group had undergone no previous surgical treatment, but the other 6 had all had some form of anal surgery. Results such as these have led to the view that incontinence subsequent to anorectal Crohn's disease is often due to aggressive surgeons and not to progressive disease. Adenocarcinoma may develop in the track of a chronic fistula and one such adenocarcinoma is reported in relation to a longstanding rectovaginal fistula in Crohn's disease [48] which has been present for 20 years. This is such a rare occurrence that it should not influence the treatment policy in perianal Crohn's disease.

Résumé

Dans la majorité des cas la maladie de Crohn périanale est asymptomatique et répond favorablement à un traitement médical adéquat de la lésion intestinale initiale, traitement consistant essentiellement en l'emploi de la Salazopyrine et de la prédnisolone dont l'efficacité est reconnue. Les lésions deviendraient—elles plus intenses qu'un essai de traitement oral par le métronidazole peut être couronné de succès. La constitution d'un abcès ischio-rectal ou périanal relève simplement d'une intervention de drainage alors que les sténoses rectales consécutives à la cicatrisation de fissures périanales peuvent

être traitées par dilatation douce. Si la maladie progresse il peut être nécessaire d'établir une dérivation intestinale, les chances de succès étant d'autant plus grandes que la maladie de Crohn n'est pas active. La dérivation intestinale constitue l'intervention préliminaire au traitement d'une fistule recto-vaginale. Lorsque la maladie de Crohn périanale est active et les lésions ano-rectales sont graves, il devient nécessaire de procéder à une proctocolectomie. Dans ce cas, la dérivation intestinale préalable rend l'intervention plus facile, la cicatrisation plus aisée et évite chez quelques malades la constitution d'une fistule permanente après la proctectomie.

Resumen

La mayor parte de los pacientes con enfermedad de Crohn perianal permanecen asintomáticos y pueden exhibir resolución con el tratamiento médico adecuado de la enfermedad intestinal de base. Este consiste, principalmente, de Salazopirina y prednisolona, drogas de conocida efectividad en la terapia de la enfermedad de Crohn. En el caso de que la enfermedad perianal local se haga más severa, puede justificarse un ensayo con metronidazol oral. El desarrollo de un absceso isquirrectal o perianal constituye indicación para el procedimiento de drenaje quirúrgico más simple que sea posible, y las estenosis rectales resultantes de la cicatrización de fisuras perianales pueden ser sometidas a dilatación delicada. La progresión de la enfermedad puede ser manejada mediante desviación del torrente fecal, pero existe mejor posibilidad de éxito en pacientes sin enfermedad rectal florida. La desviación fecal también está indicada como un procedimiento preliminar a la reparación de las fistulas rectovaginales. Los pacientes con enfermedad perianal florida y severa enfermedad anorrectal probablemente habrán de requerir proctocolectomía, pero la desfuncionalización inicial del colon facilita la operación, puede estimular la cicatrización perianal, y en algunos pacientes logra evitar la proctectomía con su alto riesgo de fistula perianal persistente.

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