Recurrence in Crohn's disease

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AJ GREENSTEIN. Recurrence in Crohn's disease. Can J Gastroenterol 1993; 7(2):211-214. Although in 1932 Crohn, Ginzburg and Oppenheimer noted recurrence in two of their 14 patients, they did not appreciate the remarkable propensity of this disease to recur following resection of all macroscopically diseased bowel. It was only later that the true panenteric nature of the disease was appreciated. During the following three decades many believed that 'radical resection' would cure the disease, but subsequent studies showed that this was fallacious. Three types of recurrent Crohn's disease may be defined: symptomatic, recurrence recognized by pathological, radiological or endoscopic techniques (true recurrences); and operative. Only recurrences confirmed by endoscopy, and gross and microscopic pathology should be accepted as true recurrent disease. Many factors influence postoperative recurrence rates. All series studied actuarially show a steady increase in calculated recurrence rates with time (which is the major and dominant factor). Other factors which increase recurrence rates are anatomic localization (ileal or ileocolonic), type of operation performed (bypass versus resection), and multiple resections. Factors which probably influence rates are long segment disease, second reoperation, perforating disease, and young age at onset. Factors which possibly influence rates are overt disease at the resection margins and female sex. The presence of microscopic or macroscopic disease at the resection margins, and the amount of normal-appearing bowel removed do not appear to affect rates of recurrence. Following strictureplasty recurrence rates are at least as high as following resection.

Key Words: Crohn's disease, Recurrence, Recurrence rates, Postoperative recurrence, Strictureplasty

Récurrence de la maladie de Crohn

RÉSUMÉ: Bien qu'en 1932 Crohn, Ginzburg et Oppenheimer aient noté une récurrence chez deux de leurs quatorze patients, ils n'ont pas mesuré la remarquable propension de cette maladie à récidiver suite à la résection de toutes les portions d'intestin affectées macroscopiquement. Ce n'est que plus tard que la véritable nature panentérique de la maladie a été appréciée à sa juste valeur. Au cours des trois décennies suivantes, plusieurs ont cru que la résection radicale serait la solution, mais des études subséquentes ont infirmé cette hypothèse. Trois types de maladie de Crohn récidivantes sont définis: symptomatique, c'est-à-dire que les récides sont reconnues par des techniques anatomo-pathologiques, radiologiques ou endoscopiques (récurrences vraies); et par la chirurgie. Seules les récurrences confirmées par endoscopie et par l'anatomo-pathologie macro-

CROHN ET AL (1) IN THEIR INITIAL paper in 1932 on regional ileitis, noted that recurrent disease occurred in two of their 14 patients. In the years that followed it became evident that the most common postoperative sequel of Crohn's disease was recurrent ileitis, most frequently affecting the neoterminal ileum just proximal to or at the anastomosis. Many factors influence postoperative recurrence rates. Important among the surgical considerations are anatomic localization, type of operation performed (bypass versus resection, or complete versus staged procedures), the length of bowel involved, presence of microscopic or macroscopic disease at the resection margins, and amount of normal-appearing bowel removed.

It is generally accepted that the rate of postoperative recurrence is high in Crohn's disease involving only or mainly the small bowel. The question of recurrence in Crohn's colitis in which the disease is confined to the large bowel remains controversial. There is considerable variation, however, in reported recurrence rates for all types of inflammatory bowel disease (IBD), reflecting the differences in patient populations, referral patterns, ways of defining recurrent disease, methods of calculating recurrence rates, operative procedures and lengths of follow-up.

The diagnosis of primary and recurrent Crohn's disease in the symptomatic patient has classically been established by radiological methods (2) but thickened narrow bowel can also be

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scopique et microscopique devraient être acceptées comme signes d'une récurrence réelle de la maladie. Plusieurs facteurs influent sur les taux de récurrence post-opératoire. Toutes les séries étudiées par méthode actuarielle font état d'une augmentation constante des taux calculés de récurrence avec le temps (qui est le facteur principal et dominant). Parmi les autres facteurs qui contribuent à la hausse au taux de récurrence, notons le siège anatomique (iléal ou iléocolique), le type d'opération effectuée (déviation versus résection) et les résections multiples. Les facteurs qui influent également sur ces taux sont l'étendue des lésions, la ré-opération, la maladie perforante et le jeune âge au début de la maladie. Les facteurs qui influencent possiblement les taux sont la maladie avérée aux marges des résections et le fait d'être de sexe féminin. La présence de maladie microscopique ou macroscopique aux marges de résection et la portion d'intestin d'apparence normale réséquée ne semblent pas influencer les taux de récurrences. Suite à la plastie des portions rétrécies, les taux de récurrence sont au moins aussi élevés que suite à la résection.

appreciated on computed tomography scan. Sites of recurrence may be seen endoscopically, provided they are within reach of the colonoscope from below or the gastroduodenoscope or enteroscope from above (3,4). With these instruments, macroscopic changes (such as aphthous or frank ulcers) can be observed, biopsies can be taken and, on rare occasions, granulomas demonstrated, confirming the presence of active Crohn's disease.

DEFINITION OF RECURRENT DISEASE

Lennard-Jones and Stalder (5) divided recurrences into recurrence of clinical symptoms without evidence of new disease; recurrent symptoms with radiological and/or histological (endoscopic should be added today) proof of disease; and recurrent disease requiring further surgery. Rutgeerts et al (4) defining a high incidence of endoscopically recognizable recurrence (73% at one year, of which only 20% were symptomatic), suggested that the ultimate course of the disease may be predicted by the severity of the early postoperative lesions (4).

METHODS OF ESTIMATING RECURRENCE

Many of the early discrepancies reported in the literature reflect the fact that the earliest reports estimated overall recurrence rates in a crude fashion, simply noting the number of recurrences occurring in the total group studied. In 1967, Lennard-Jones and Stalder (5)

used actuarial methods incorporating the data obtained with progressive passage of time into an actuarial life-table. In 1975, the current authors (6) examined several different factors influencing actuarially calculated recurrence rates and confirmed many of the earlier findings. Sachar et al (7), using multivariate analysis, observed that the critical question is not only which factors influence recurrence rates, but which factors do so independently of other confounding influences.

FACTORS INFLUENCING RECURRENCE

DeDombal et al (8) suggested that there were two types of Crohn's disease: an aggressive sort and a more slowly progressive type. We have studied a series of 770 patients, among whom there appeared to be two different forms of disease. The perforating type appeared to be more aggressive and recurred sooner, while the nonperforating type recurred later (9).

All series studied actuarially show a steady increase in calculated recurrence rates with time which is the major and dominant factor in these rates. Other factors which influence recurrence rates are ileal or ileocolonic disease, bypass and multiple resections. Factors which probably influence rates are long segment disease, second reoperation, perforating disease and young age at onset. Factors which possibly influence rates are overt disease at the resection margins and female sex.

Age appears to have an influence on

the tendency to recur. In almost all reports on the subject, the recurrence rate has been consistently greater in younger age groups. This influence of age remains valid even when actuarial methods are used to correct for variations in follow-up interval. Most authors find no difference in recurrence rates between men and women, although a considerably poorer prognosis in women has been noted (8).

The anatomic site of involvement helps to determine the likelihood of recurrence. High recurrence rates, both crude and actuarial, have been reported for most series of patients with regional ileitis following resection (recurrence rates ranging from 42 to 86% at 15 years). Even higher rates follow bypass, and there is little controversy regarding recurrence in small bowel disease. The question of recurrence in Crohn's colitis, in which the disease is initially confined to the colon, however, has engendered argument. Most observers believe that patients with disease confined to the colon have a lower rate of recurrence than those in whom the terminal ileum is involved, although some have found no difference (10). There is agreement that recurrence following subtotal colectomy and ileorectal or ileosigmoid re-anastomosis is high.

The propensity of the proximal and distal segments of the gut to develop evidence of disease after an operative procedure has bearing on the problem of postoperative recurrence. Most authors report recurrences in the neo-terminal ileum just proximal to the suture line in patients with anastomosis or in the most distal ileum following ileostomy. Koch et al (11) found that the site of recurrence was determined by the site of primary disease. In ileitis, 100% of recurrences involved the proximal gut, 30% were both proximal and distal, and none was exclusively distal. Recurrences in ileocolitis patients developed proximally in 19%, distally in 19%, and both proximally and distally in 62%. Thus, disease initially confined to the terminal ileum may subsequently progress to involve the colon following resection and re-anastomosis.

Of 68 surgically treated cases of IBD

sparing the rectum, Korelitz (12) found distal spread to the rectum in 43 (39%), proximal spread in 39 (35%), proximal and distal spread in 16 (14%) and no spread in 16 (14%). In ileocolitis or colitis, therefore, distal recurrence is as common as proximal recurrence, whereas in ileitis, proximal recurrence is considerably more common. Although a number of studies suggest an inverse relationship between recurrence and preoperative duration of disease – the shorter the duration, the higher the recurrence rate – this has not been confirmed.

In an outstanding study by Rutgeerts et al (4) on 89 patients studied preoperatively and examined endoscopically in the postoperative period, the ultimate course of the disease was best predicted by the early postoperative lesions observed at ileoscopy. Clinical factors which influenced outcome were preoperative disease activity, surgical indication, and number of surgical resections.

RECURRENCE FOLLOWING STRICTUREPLASTY

There has been considerable difference of opinion among surgeons regarding resection of apparently normal bowel beyond the obviously diseased segment. Lengths of variable extent have been suggested. However, the findings of a study by Pennington et al (13) did not support the concept of radical bowel resection. These ob-

servers found no difference in recurrence rates whether there was disease at the resection margin. Lee et al (14) also reported that there was no significant difference in the times or frequencies of recurrence among 24 patients with active inflammation up to the limit of resection and a similar number studied with no disease at the resection margin. Their recommendation was, therefore, to carry out 'enteroplasty' without resection on patients with multiple areas of disease. They claimed satisfactory results, with preservation of as much bowel as possible using these nonresectional techniques. A recent 10 year follow-up from Oxford by Dehn et al (15) supports their early positive reports; they found a reoperation rate of 16%, four of 24 patients requiring a further 13 strictureplasties. Sayfan et al (16) found that the site-specific operation-free intervals in 41 patients of 75% at five years were not significantly different from an equal number treated by small bowel resection. However they used strictureplasty and not patients as the denominator in the former group. In a series of 27 strictureplasty patients subjected to 126 strictureplasties carried out by this author eight required reoperation (two were for cancer, three for new strictures, and three for perforating complications). Actuarially calculated reoperation rates were at least as high as for small bowel resection. A most interesting aspect of this type of surgery is the relatively infre-

quent occurrence of recurrent strictures at original strictureplasty sites, occurring in approximately 2% (three of 127) of reported strictureplasties (17).

Although Ritchie and Lockhart-Mummery (18) reported an increased recurrence rate in patients with staged operative procedures, this finding is disputed by Steinberg et al (19) who found no such difference.

Cooke et al (20) found that the number of operations was greater in patients who received steroids. However, patients who have required and received steroid therapy are not, in most respects, clinically comparable to those who have not.

The ultimate objective of treatment of Crohn's disease is a physiologically well patient, who is able to lead a normal life, work regularly, and interact socially in his or her ordinary environment. Studies from Leeds, Birmingham and New York, have found favorable results in over 90% of patients (21-23).

The decision to intervene surgically in recurrent Crohn's disease is one of the most challenging problems in clinical medicine. It should be a joint decision made by surgeon and gastroenterologist. When made at an appropriate time following failure of medical therapy to control the disease, surgical intervention will lead to a better quality of life, reduce morbidity and minimize mortality in this chronic, incurable intestinal affliction.

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