

Colonic cancer and Crohn's disease

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SUMMARY Four patients with both carcinoma and Crohn's disease of the colon are reported. Other cases in the world literature are summarized and the relationship between the two diseases is discussed. It is concluded that present evidence does not establish an increased risk of malignancy in colonic Crohn's disease.

The risk of malignant change in idiopathic proctocolitis is well established but there is no unequivocal evidence that Crohn's disease of the colon predisposes to carcinoma. In 1948 Warren and Sommers briefly reported an adenocarcinoma of the ascending colon in bowel affected by Crohn's disease but the association of the two conditions has attracted little attention until recent years. Interest has developed in conjunction with a growing awareness that proctocolitis and Crohn's disease confined to the colon are different diseases and that these two types of colitis can be distinguished on clinical, radiological, and pathological evidence (Lennard-Jones, Lockhart-Mummery, and Morson, 1968).

A review of the world literature has revealed reports of 11 patients in whom both carcinoma and Crohn's disease developed in the colon. Only six of these have been reported in any detail (Davis and Caley, 1960; Sheil, Clark, and Goligher, 1968; Parrish, Karsten, McRae, and Moretz, 1968; Perrett, Truelove, and Massarella, 1968). The paucity of the published data on the association of these two diseases has prompted this study of four further cases.

CASE REPORTS

These are summarized in Table I.

DISCUSSION

Of the four patients reported here only two (cases 1 and 2) were admitted to St Mark's Hospital. The remaining two were referred from other hospitals for an opinion on the pathological nature of the lesions resected. The incidence of carcinoma has been two in 189 patients with Crohn's disease of the large intestine admitted to St Mark's Hospital.

Details of the reported cases with both colonic carcinoma and Crohn's disease, and the frequency of carcinoma in larger series, are summarized in Table II. It is evident that the incidence of malignancy in the published series of colonic Crohn's disease from different centres is low, with the exception of the Oxford series in which an incidence of 3.7% paralleled the incidence of 3.5% for carcinoma in patients with proctocolitis seen at the same hospital. Most of the patients reported have had a short history, the Crohn's disease and carcinoma presenting together. Only in two has the Crohn's disease long preceded the development of carcinoma.

The relationship between carcinoma and Crohn's disease in the small bowel may be different from that in the large bowel. There have been 17 case reports of carcinoma and Crohn's disease of the small intestine (Cantwell, Kettering, Carney, and Ludwig, 1968; Sheil *et al*, 1968; Morowitz, Block, and Kirsner, 1968). In these patients the Crohn's disease has usually been diagnosed many years before the carcinoma is discovered, and since Crohn's disease and carcinoma of the small bowel are both rare conditions, it is likely that the two are related.

Carcinoma of the large bowel is common and, therefore, its association with Crohn's disease is more difficult to evaluate. It may be that carcinoma is a complication of longstanding Crohn's disease of the colon but this complication is rare because this type of colitis has only recently been recognized and because many patients are treated by colectomy early in the course of the disease. Only 19 of our 189 patients with colonic Crohn's disease have preserved an intact colon for 10 or more years after the onset of their symptoms. Against this hypothesis is the fact that the histological picture of Crohn's disease is not that of a precarcinomatous condition because the main histological changes are found in

TABLE I

PRESENT CASES OF CARCINOMA AND COLONIC CROHN'S DISEASE¹

| Case Number | Age/ Sex | Symptoms and Signs | Length of History | Radiographic Findings | Biopsy Findings | Site of Car- cinoma | Site of Crohn's Disease | Histology of Operation Specimen | Course |
|-------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 1 | 37/F | Diarrhoea, weight loss, and faecal leakage from vagina, anal tags, perianal ulceration, and recto-vaginal fistula with an indurated swelling in lower rectum | 13 yr | Whole colon abnormal; two strictures; recto-vaginal fistula | Carcinoma | Rectum | Whole colon and rectum | Adenocarcinoma, transmural inflammatory changes including proctofocal collections of lymphoid tissue, fibrosis and oedema | Died from metastases one year after colectomy |
| 2 | 61/F | Diarrhoea and lassitude; anal tags, fissures, and nodular anal canal | Two mth | Localized abnormality in sigmoid with fissuring and filling defects (Fig. 1) | Carcinoma, sarcoid granulomas | Sigmoid | Sigmoid | Adenocarcinoma, transmural inflammation and sarcoid granulomas | Satisfactory progress after left hemicolectomy and end-to-end anastomosis |
| 3 | 60/M | Diarrhoea and weight loss; stricture at 12 cm on sigmoidoscopy | Two mth | Filling defect in proximal sigmoid colon | Foci of epithelioid and giant cells; no malignancy | Sigmoid | Sigmoid | Adenocarcinoma, transmural inflammatory changes with sarcoid granulomas | Uneventful progress after sigmoid resection and end-to-end anastomosis |
| 4 | 70/M | Diarrhoea and anal pain; growth in rectum visible on sigmoidoscopy | Six wk | | Chronic inflammation of submucosa with occasional giant cells; no malignancy | Rectum | Rectum | Papillary carcinoma, transmural inflammation with sarcoid granulomas | Anterior resection of rectum performed with anastomosis of sigmoid to anal stump. Died five months later from broncho-pneumonia |

Cases 1 and 2 were admitted to St Mark's Hospital; cases 3 and 4 were referred to the hospital but not admitted and are, therefore, excluded from the St Mark's series of patients with colonic Crohn's disease.

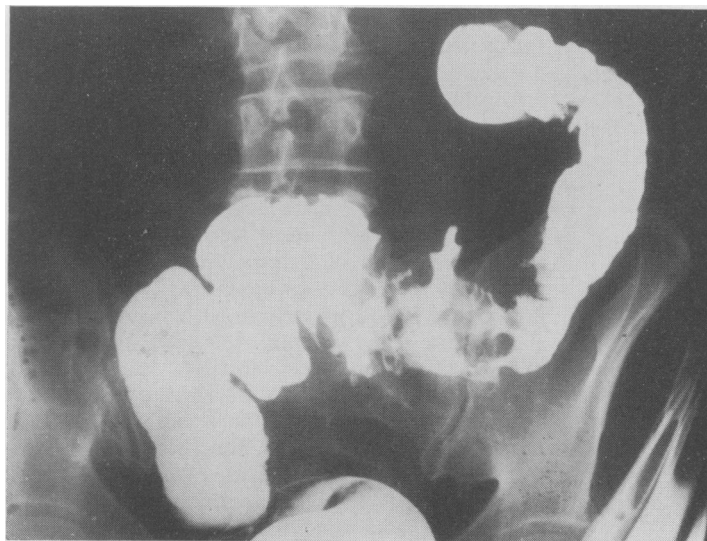


FIG. 1. Barium enema from case 2 showing a localized abnormality in the sigmoid colon with fissuring suggestive of Crohn's disease and filling defects suggestive of carcinoma.

TABLE II
REPORTED CASES OF CARCINOMA WITH COLONIC CROHN'S DISEASE

| Author | Centre | Incidence of Carcinoma in Colonic Crohn's Disease | Age/ Sex | Length of History | Site of Carcinoma | Site of Crohn's Disease in the Colon | Comments |
|--------------------------------|--------------------------------------|---------------------------------------------------|--------------------|-------------------|----------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Warren and Sommers (1948) | Boston, Mass | — | — | — | Ascending colon | Ascending colon | |
| Van Patter <i>et al</i> (1954) | Mayo Clinic, Minnesota | 1 in 222 | — | — | — | — | No details given |
| Davis and Caley (1960) | Royal Infirmary, Sheffield | — | 44/F | 2½ yr | Pelviorectal junction | Caecum | Isolated case |
| Cornes and Stecher (1961) | Gordon Hospital, London | 0 in 45 | — | — | — | — | |
| Janowitz <i>et al</i> (1965) | Mount Sinai Hospital, New York | 0 in 60 | — | — | — | — | |
| Crohn and Yarnis (1966) | | 2 in 291 | — | — | Distal transverse colon | — | |
| Hawk and Turnbull (1966) | Cleveland Clinic, Ohio | 1 in 87 | 75/M | — | — | — | Carcinoma and Crohn's disease in different parts of the colon |
| Sheil <i>et al</i> (1968) | General Infirmary, Leeds | 1 in 106 | 50/F | 21 yr | Rectum | Whole colon and rectum | Carcinoma developed after colectomy and ileorectal anastomosis |
| Parrish <i>et al</i> (1968) | Augusta, Georgia | — | 65/F | 4 mth | Caecum and ascending colon | Ascending and transverse colon | Isolated case |
| McGovern and Goulston (1968) | Royal Prince Alfred Hospital, Sydney | 0 in 30 | — | — | — | — | |
| Perrett <i>et al</i> (1968) | Radcliffe Infirmary, Oxford | 3 in 82 | 34/F | 2 mth | Caecum | Caecum | Readmitted a year later with Crohn's disease of remaining colon and carcinomas of caecum and transverse colon |
| | | | 67/F | 2 mth | Sigmoid | Sigmoid | |
| | | | 72/F | 3 wk | Caecum | Caecum and ascending colon | |
| Present cases | St Mark's Hospital, London | 2 in 189 | Details in Table I | | | | |

the submucosa and the intestinal epithelium is relatively spared. The absence of precancerous epithelial changes in Crohn's disease contrasts with the findings in some cases of proctocolitis in which epithelial destruction is a prominent feature (Morson and Pang, 1967).

Conversely, it is possible that Crohn's disease is a complication of carcinoma. With this in mind, Sheil *et al* (1968) examined 12 cases of carcinoma of the small intestine in a search for histological evidence of Crohn's disease but found none. It is well known that sarcoid-like lesions can be found occasionally in the immediate neighbourhood of malignant neoplasms and in the regional lymph nodes (Gregorie, Othersen, and Moore, 1962). In all the cases reported here, however, the inflammatory lesion involved the bowel wall beyond the immediate confines of the tumour and showed in addition other stigmata of Crohn's disease such as cobblestoning, fissuring, and transmural inflammation.

Carcinoma and Crohn's disease may develop in the same patient because of an individual predisposition to both diseases. This would account

for the cases in which carcinoma and Crohn's disease have occurred in different parts of the intestine. A 56-year-old welder who had a resection for rectal carcinoma at this hospital was readmitted five years later because of Crohn's disease of the terminal ileum diagnosed at laparotomy. No evidence of Crohn's disease of the large intestine was found in the first operation specimen or at the second laparotomy. The occurrence of regional ileitis and rectal carcinoma in the same patient has been noted by other authors (Cornes and Stecher, 1961; Lennard-Jones and Stalder, 1967) and cases in which Crohn's disease and carcinoma have developed in different areas of the large intestine have also been reported (Davis and Caley, 1960; Hawk and Turnbull, 1966).

Lastly, the association of carcinoma and Crohn's disease of the colon may be coincidental. Since 1949 a total of 3,910 patients with carcinoma of the large bowel, excluding carcinoma of the anus, have been admitted to this hospital. Among these, two have had colonic Crohn's disease compared with 44 patients who have had proctocolitis. These figures suggest that the risk of malignancy is perhaps much less in Crohn's disease than in proctocolitis but the

relative incidence of Crohn's disease and proctocolitis is unknown. The incidence of Crohn's disease in this carcinomatous group cannot be compared with that of colonic Crohn's disease in the general population because this too is unknown.

Evidence to date suggests that the management of colonic Crohn's disease should not be influenced by fears of malignant change. In those patients with a short history the possibility of both Crohn's disease and carcinoma being present should be considered, remembering that a biopsy showing sarcoid granulomas does not exclude malignancy elsewhere.

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