

Ankylosing spondylitis and inflammatory bowel disease*

I. Prevalence of inflammatory bowel disease in patients suffering from ankylosing spondylitis

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SUMMARY To establish the prevalence of inflammatory bowel disease in ankylosing spondylitis (AS), 79 AS patients underwent detailed medical screening, including sigmoidoscopic and roentgenological examination. 48 had gastrointestinal symptoms and the others did not. In 3 patients a diagnosis of Crohn's disease was made which was previously established. In all other patients inflammatory bowel disease could be excluded. The prevalence of inflammatory bowel disease in this series of patients with AS therefore was 3.8%.

An association between ankylosing spondylitis (AS) and inflammatory bowel disease (IBD) seems to be firmly established (Romanus, 1953; Steinberg and Story, 1957; Wilkinson and Bywaters, 1958; McBride *et al.*, 1963; Jayson and Bouchier, 1968; Jayson *et al.*, 1970). However, it is not clear to what extent patient selection contributed to the wide variation in the reports of prevalence of AS in patients with ulcerative colitis and Crohn's disease. Furthermore, strict criteria for diagnosing AS are lacking in some, particularly older, studies but are now agreed upon internationally (Rome and New York criteria). The purpose of this study was to establish the prevalence of symptomatic or asymptomatic IBD in a group of nonselected consecutive AS patients, attending the Centre for Rheumatic Diseases.

Patients and methods

Patients suffering from AS and attending the outpatient clinic were asked to co-operate in this study. Diagnosis of AS was made according to the New York criteria (Bennett and Burch, 1967) by one of us, as reported elsewhere (Dekker-Saeys, 1977). For

gastrointestinal screening, all patients were carefully interviewed, special attention being paid to complaints such as heartburn, dysphagia, fat intolerance, abdominal pain, frequency and other characteristics of bowel motions, loss of blood or mucus, previous abdominal surgery and family history of IBD. At clinical examination the abdomen was examined for inflammatory masses, fistulae, or any other abdominal abnormality.

Routine haematological investigation was done and the serum carotene determined to screen for fat malabsorption. Stools were tested for occult blood. The anus was examined to exclude anal fistulae, oedematous hypertrophic anal tags, or haemorrhoids. The rectum was examined by sigmoidoscopy according to the following criteria: mucosal vascular pattern, erythema, friability (Wipe-test), ulceration, mucopurulent exudate, granularity, and pseudomelanosis. In a large number of normal looking rectums and in every case of even minor mucosal abnormality a rectal biopsy was taken between 8 and 10 cm from the anal margin. The biopsies were orientated on monofilament plastic mesh and fixed in 10% neutral formalin, and after serial sectioning were examined by two pathologists independently, with no prior knowledge of the disease history. The intestinal tract was examined radiologically using a duodenal intubation method (Sellink, 1974) after careful preparation of the bowel. In most cases by

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using this enteroclysis method, optimal analysis not only of the small intestine but also of the colon was possible. Barium enema was performed using a standard technique whenever the colon radiograms showed any abnormality, whenever the quality prevented proper evaluation, or when rectal mucosal changes were seen.

Results

Of 118 consecutive patients consenting to a gastro-intestinal investigation, 79 were selected. This included all AS patients with gastrointestinal complaints (48 cases) and out of the remaining group of 70 patients a random selection of 31 cases, who were symptom free upon thorough and repeated questioning and without biochemical abnormalities to support a diagnosis of IBD. 3 of the 48 symptomatic patients suffered from Crohn's disease. However, the diagnosis was already established. The gastrointestinal symptoms of the other 45 patients are listed in Table 1. The majority had an irregular bowel action, in particular complaints of constipation, with or without abdominal cramps. Complaints of heartburn or dysphagia were found in 16 patients mainly when taking anti-inflammatory drugs. 12 had had abdominal surgery, including appen-

dectomy and cholecystectomy. None had had bowel resections. Haemorrhoidal blood loss was mentioned by 7 patients and fat intolerance by 6. No abdominal abnormalities (abdominal masses or external fistulae) were detected in any of the symptomatic or asymptomatic patients on physical examination.

ANOSIGMOIDOSCOPY

Minor anal pathology was found in 32 patients: anal haemorrhoids 25, anal fissure 5, and condylomata 2. Sigmoidoscopy showed no mucosal abnormalities in 70 patients, in 25 of whom a rectal biopsy was taken showing normal mucosa and submucosa. The mucosa appeared abnormal at sigmoidoscopy in 6 patients (Table 2). All 6 denied a history of macroscopical blood loss or diarrhoea. Rectal biopsies of 4 of these 6 patients showed non-specific inflammatory changes, while the other two biopsies were normal. 3 of the 6 were treated with indomethacin or phenylbutazone suppositories at the time of the sigmoidoscopy. At follow-up examination after the drug was discontinued, in 2 of them no endoscopic or histological abnormalities were discovered. An enteroclysis examination and a barium enema were performed in all 6 cases, showing no radiological evidence of IBD.

RADIOLOGY

The intestinal tract was examined radiologically by means of the enteroclysis technique in 65 patients; an additional barium enema was given in 13 patients. No additional radiological diagnosis of Crohn's disease or ulcerative colitis was made in the 45 symptomatic and the 31 asymptomatic AS patients, studied by means of history, physical examination, anosigmoidoscopy, biopsy, and radiology, except in 3 patients already known to be suffering from Crohn's disease.

Table 1 *Gastrointestinal complaints in 45 AS patients*

Irregular bowel action	27
Heartburn or dysphagia	16
Abdominal pain and cramps	14
Previous abdominal surgery	12
Anal blood loss (haemorrhoids)	7
Fat intolerance	6
Weight loss	3
Lactose intolerance	2
Family history of IBD	1

Table 2 *Findings in patients with abnormal sigmoidoscopy*

Case no.	History	Occult blood loss	Therapy	Sigmoidoscopy	Biopsy	Repeat biopsy	X-ray of intestine	X-ray of colon
1	Irregular bowel action	—	Phenylbutazone suppositories	Oedema friability, erythema	Cryptitis, hyperaemia	N	N	N
2	—	+	—	Oedema, erythema	Oedema, melanin	N	„	„
3	—	—	—	Oedema, friability	N	—	„	„
4	Irregular bowel action	—	Indomethacin suppositories	Oedema, erythema	N	N	„	„
5	Irregular bowel action	—	Indomethacin suppositories	Erythema, friability	Nonspecific inflammation	—	„	„
6	—	—	—	Erythema	„	N	„	„

N = normal.

Discussion

This study was designed to investigate the prevalence of IBD in a group of patients suffering from AS. At the start it was already known that 3 patients were suffering from Crohn's disease. Despite extensive examination, no additional cases of IBD (Crohn's disease or ulcerative colitis) were discovered among the remaining 76 patients who underwent clinical, radiological, and endoscopic study. It is unlikely that any further cases of IBD would have been detected in the remaining group of 39 AS patients who had no gastrointestinal symptoms but who were not subjected to these detailed investigations. This is supported by the evidence that the majority of patients who have both AS and IBD show a severely protracted clinical course of the bowel disease, particularly those with Crohn's disease (Dekker-Saeys *et al.*, 1978).

This investigation suggests therefore that the true prevalence of IBD in AS, as judged by a study of patients attending rheumatology outpatients clinics, is likely to be less than 3.8% (3 of 79 patients) and of the order of 2.6% (3 of 118 patients). This figure is similar to those of previous reports (Wilkinson and Bywaters, 1958; McBride *et al.*, 1963; Serre and Simon, 1964). However, our results differ from those obtained in London (Jayson and Bouchier, 1968) and Bath (Jayson *et al.*, 1970), where a prevalence of

17% and 18% respectively was found. The authors of that study suggested that a lower prevalence of IBD in AS had been found in previous studies because investigation had only been carried out on patients with gastrointestinal symptoms. In our study, patients without gastrointestinal symptoms were also subjected to detailed investigations, these being more extensive than in the London and Bath studies where radiological examination of the small bowel was not performed. The latter might explain why it was ulcerative colitis which was chiefly diagnosed in those studies. Furthermore, it is doubtful whether a correct diagnosis of ulcerative colitis can be made in patients without symptoms and with normal findings on x-ray and sigmoidoscopy, solely on the basis of an increase in mononuclear inflammatory cells in the lamina propria, as was done in some of their cases. It is possible that local treatment with anti-inflammatory drugs might have been a factor in producing such changes. We found 6 patients with distal rectal mucosal pathology. 3 were on local anti-inflammatory treatment and their biopsies showed a nonspecific inflammatory infiltrate. Follow-up of 2 of these patients showed that the histological abnormalities disappeared when topical treatment with indomethacin or phenylbutazone was discontinued. It appears therefore that abdominal symptoms in most of our patients with AS were not related to inflammatory bowel disease, but probably to an irritable bowel syndrome.