Clinical Experience

Crohn's Disease in the Elderly

Prolonged Delay in Diagnosis

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Crohn's disease typically afflicts younger patients, with a peak incidence in the third decade of life.[1] As Crohn's disease infrequently presents in the elderly, the nature and course of the disease among older patients has not been well defined. The presenting symptoms of abdominal pain, fever, and diarrhea so commonly seen with Crohn's disease may suggest other more frequently encountered illnesses in the elderly such as diverticulitis, ischemic colitis, or malignancy.[2] One easily can see that attributing these complaints to these more common disorders or a failure to consider the diagnosis of Crohn's disease can lead to delay in diagnosis and appropriate therapy in the elderly. In reviewing the experience with Crohn's disease presenting in elderly patients at the University of Michigan, the authors hope to determine clinical characteristics of the disease in these patients and to assess the degree to which specific diagnosis or appropriate therapy was delayed after presentation with symptoms.

Materials and Methods

The charts were reviewed of all patients aged 60 years or older discharged with a diagnosis of Crohn's disease from January 1975 to August 1983. Those patients in whom the diagnosis was made after the age of 60 were included in the study and are designated as group 1. The authors evaluated the extent and severity of the disease, the duration of symptoms from time of presentation to the time of diagnosis, the degree to which misdiagnosis caused a delay in treatment, the methods of diagnosis, and the patients' course during follow-up. The diagnosis was accepted as correct when patients had an appropriate clinical presentation and course and had one of the following: radiologic appearance typical of Crohn's disease (three), histologic findings typical of Crohn's disease (four), or a typical laparotomy appearance described by a senior surgeon.

Randomly selected charts of young adult patients with Crohn's disease whose ages ranged from 20 to 50 years at the time of diagnosis were examined for identical criteria, and these comprise group 2. The findings in the older (group 1) and younger (group 2) patients were compared, and, where appropriate, results were analyzed by the Student's *t* test.

Results

Ten patients were identified in whom the diagnosis of Crohn's disease was made after age 60 (Table 1), with a range of 60 to 78 years and a mean of 68 ± 1.6 years. Five patients were men and five were women. The 20 control patients ranged in age from 20 to 45 years at the time of diagnosis with a mean age of 27 ± 1.6 years. Seven were men and 13 were women.

The distribution of disease involvement is presented in Table 1. There was no significant difference between the two groups. Diarrhea and abdominal pain were the most common presenting symptoms and occurred at similar frequency in the two groups. Elderly patients, however, complained of symptoms for a mean of 24 ± 7 months (median, 16 months) compared with 10 ± 3 months (median, five months) for the younger control subjects, a difference that is statistically significant ($P < .05$).

In the elderly patients 60% were given an incorrect or incomplete diagnosis that caused a delay of more than six months to a diagnosis of inflammatory bowel disease as compared with only 15% of the younger patients. In these older patients, diverticulitis was the most common misdiagnosis. These cases are included in Table 2. Most of the patients were referrals from outside hospitals and initial evaluation was usually performed at other institutions. As indicated, the other diagnoses that delayed correct diagnosis were gallbladder disease (a coincidental finding of gallstones), sprue (suggested by finding of abnormal glucose tolerance test, but without x-ray or histologic evidence), and irritable bowel syndrome with sliding internal

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TABLE 1. Clinical Features of Elderly Patients Versus Younger Patients With Crohn's Disease

	Group 1*	Group 2†
Patients	10	20
Age		
(mean ± SEM)	68 ± 1.6	27 ± 1.6
Range	60–78	20–45
Sex (male:female)	5:5	7:13
Anatomical distribution of disease		
Ileal	4	4
Ileocolonic	2	15
Colonic	4	1
Presenting symptoms		
Diarrhea	7	14
Abdominal pain	8	17
Weight loss	5	5
Emesis	4	4
Fever	2	4
Perianal disease	2	1
Duration of symptoms to diagnosis		
Mean (mo ± SEM)	24 ± 7‡	10 ± 3‡
Median (mo)	16	5

* Diagnosis at greater than age 60.
† Diagnosis at less than age 60.
‡ Significance at $P < .05$.

hernia. In two of the cases, the diagnosis probably would have been made if small bowel x-rays had accompanied the upper gastrointestinal series. Initial misdiagnoses that did not lead to significant delay included ischemic colitis, adenocarcinoma, and peptic ulcer disease because appropriate radiologic and endoscopic procedures were performed.

The diagnostic studies that contributed to confirmation of the correct diagnosis are tabulated in Table 3. Only three elderly patients had radiographic upper gastrointestinal series with small bowel follow through. In two of these three patients, the radiologic findings alone were sufficient to establish the diagnosis of Crohn's disease (all other patients had surgical or endoscopic biopsy confirmation).

Initially, six of the elderly patients were managed medically; however, four underwent immediate surgery. None of these four had a preoperative diagnosis. Seven underwent surgery at some point in their course. The indications for surgery were evenly spread between bowel obstruction (three), intractable pain or bleeding (three), and exploration for diagnosis (four). In retrospect, three of the exploratory procedures possibly could have been avoided if the diagnosis of Crohn's disease had been considered earlier. Among the younger patients, 14 were initially managed medically and six surgically. Of this group only two patients underwent explor-

TABLE 2. Clinical Course of Elderly Patients With Crohn's Disease and Delay in Diagnosis of More Than Six Months

Case	Age at Diagnosis	Symptoms	Initial Diagnostic Studies	Initial Diagnosis	Final Diagnosis
1	73	Nausea, emesis, rectal bleeding	UGI/SBFT: normal BE: narrowing, lateral sinus tract	Diverticulitis	Crohn's colitis: sigmoid obstruction, diagnosis at laparotomy
2	73	Diarrhea, anal fistula, anemia	UGI(no SBFT): normal BE: submucosal sinus tract, probable abscess	Diverticulitis	Crohn's colitis: pyoderma gangrenosum, diagnosis on sigmoid biopsy, subsequent colectomy
3	65	Diarrhea, abdominal pain, rectal bleeding, acute abdomen	BE(later): sigmoid narrowing Surgery: diverting colostomy	Diverticulitis with perforation	Crohn's colitis: diagnosis at time of sigmoid resection
4	66	Abdominal pain, diarrhea	UGI(no SBFT): normal BE(x2): diverticuli Cholelithiasis	Cholelithiasis	Crohn's ileocolitis: diagnosis at time of cholecystectomy
5	70	Diarrhea, nausea, bloating, no weight loss, no anemia	UGI(no SBFT): normal BE: normal Sigmoidoscopy: hemorrhoids	Irritable bowel syndrome	Crohn's ileitis: partial bowel obstruction, diagnosis at laparotomy and resection
6	67	Diarrhea, abdominal pain	UGI(no SBFT): normal	Sprue	Crohn's ileitis: subsequent abnormal UGI/SBFT

UGI = upper gastrointestinal series; SBFT = small bowel follow through; BE = barium enema.

TABLE 3. Procedures Contributing to Diagnosis of Crohn's Disease

Patients	Group 1* (*N* = 10)	Group 2† (*N* = 20)
Upper gastrointestinal series with small bowel study	3	12
Barium enema	4	5
Colonoscopy	3	2
Sigmoidoscopy	3	2
Surgery	5	5
Angiography	1	0

* Diagnosis at greater than age 60.
† Diagnosis at less than age 60.

atory laparotomy for diagnosis. Fifteen of the patients eventually required an operation. During the follow-up period (mean, 3.6 years for the older group), no patients died of the disease or from complications of surgery.

Discussion

During the past two decades, various conclusions have been drawn about the natural history of Crohn's disease affecting older patients. Some believe that the data suggest that the disease more often manifests as a granulomatous colitis, which is relatively indolent and rarely requires surgical intervention.[5-7] Others claim that elderly patients frequently have ileal disease, often require multiple operations, and have high mortality and morbidity.[8] A third contingent has found the disease to be similar in young and old patients.[9] Each of these studies was too small to permit a concensus. Recently, Shapiro et al.[10] identified 33 patients at Beth Israel Hospital who presented with Crohn's disease after age 60 years. The distribution of disease involvement corresponded closely with the authors' findings. Both studies suggest that isolated ileal disease is more frequent and ileocolic involvement less common than in the general population of Crohn's patients as typified by the study by Farmer et al.[11] of 615 patients. Otherwise, the presenting symptoms, initial management, eventual need for surgery and re-operation, and ultimate outcome appear to be similar for older and younger groups of hospitalized patients.

Approximately 3 to 5% of patients with Crohn's disease are diagnosed after age 60, and the incidence of Crohn's disease in the elderly has been calculated at two cases per 10,000 people over age 60 per year.[12] In these few individuals, the differential diagnosis for abdominal symptomatology is much broader, and these cases would seem particularly at risk of misdiagnosis. Other common illnesses, such as diverticulitis, may coexist with Crohn's disease, and radiologic findings may be less conclusive than in younger patients.[13] Meyers et al.[13] found that half of elderly patients with Crohn's colitis had granulomatous inflammation of diverticuli on pathologic examination. This study suggests that Crohn's disease may actually increase the incidence of diverticuli in these patients and that long fistulous sinus tracts demonstrated on barium enema should raise the suspicion of Crohn's involvement of diverticuli. Crohn's disease may mimic ischemic bowel disease on barium studies,[12] and endoscopy or surgery may be required to differentiate the two disorders.

That elderly patients with Crohn's disease had a significant delay in diagnosis compared with younger controls had been predicted by earlier, anecdotal reports.[14] Crohn's disease in general may be difficult to diagnose. Admans et al.[15] concluded that only 20% of all patients are correctly diagnosed after the initial investigation of symptoms, and approximately 60% after the first year. The National Cooperative Study of Crohn's Disease[16] suggested a marked delay for all patients from the onset of symptoms to a correct diagnosis. The present study found that this interval to diagnosis was significantly longer in the elderly when compared with younger patients. As well, the elderly patients had fewer radiographic and endoscopic studies that would lead to correct diagnosis. This presumably led to the increased use of exploratory laparotomy for diagnosis in these patients.

Although Crohn's disease is unusual in elderly patients, the diagnosis should be considered in cases presenting with diarrhea, abdominal pain, and fever, or when older patients with common bowel diseases have prolonged, complicated, or atypical courses. Small bowel radiography and colonoscopy with biopsy should be performed earlier in these cases, and reexamination of previous pathology specimens, when available, is indicated to avoid unnecessary or inappropriate medical therapy.

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