Colorectal Schistosomiasis:
Report of Three Cases

CHARLES M. MOSS, M.D.,† NINO CARNEVALE, M.D.,† WILHELM STERN, M.D.,‡
JOHN LI, M.D.§

From Montefiore Hospital and Medical Center, Montefiore-Morrisania Affiliate,
The Albert Einstein College of Medicine, Bronx, New York

SCHISTOSOMIASIS is prevalent in several Caribbean Islands; however, the Puerto Rican infestation rate of 14 per cent is of particular concern, as more than one million former inhabitants of Puerto Rico now reside principally in large urban areas of the mainland United States.

Three unusual cases of schistosomiasis seen on the surgical service of our 500-bed municipal hospital emphasized the variations of pathologic anatomy and clinical presentation and stressed the need to maintain clinical vigilance to detect this disorder.

Report of Three Cases

Patient 1: A 33-year-old Puerto Rican woman was first seen because of diffuse abdominal pain, vomiting, and scant diarrheal stools. She had been a resident of the United States for the preceding ten years. Past medical history included two years of peptic ulcer symptoms. An upper gastrointestinal series had been done elsewhere one week prior to admission.

The patient appeared cachectic, and her abdomen was distended. On abdominal examination the bowel sounds were decreased and moderate tenderness was present in all quadrants. No abdominal mass could be palpated. The rectal examination disclosed no abnormality, and the stool was negative for occult blood.

Hematocrit was 44 per cent. Leukocyte count was 3,700 per cu mm, with 80 per cent neutrophils, 19 per cent lymphocytes, and 1 per cent stab cells. Serum sodium was 134 mEq/l, potassium 3.0 mEq/l, chlorides 93 mEq/l, blood urea nitrogen 15 mg/100 ml, glucose 3.3 mg/100 ml, alkaline phosphatase 43 IU/l, creatine phosphokinase 46 IU/l, lactic dehydrogenase 200 IU/l, SGOT 85 IU/l.

Abdominal roentgenograms showed barium from the prior upper gastrointestinal series filling the distended colon down to the distal sigmoid. The rectal gas shadow appeared narrow and constricted. Roentgenogram of the chest disclosed no abnormality.

Sigmoidoscopy revealed a rectal stricture 10 cm from the anal verge, with the lumen narrowed to 0.5 cm. Examination of a biopsy specimen obtained at the site of narrowing disclosed fresh schistosomal eggs in the submucosa.

The patient was treated with enemas and nasogastric suction. However, failure of nonoperative decompression necessitated performance of a right transverse colostomy 48 hours after admission. A four-week course of stibophen was given to treat the schistosomiasis. A barium-enema study done at this time revealed incomplete mechanical obstruction in the sigmoid colon. Diffuse mucosal edema extending to the lower descending colon was evident proximal to the obstruction (Fig. 1). Spot films of the sigmoid colon showed a sharp narrowing of the distal sigmoid with reduction of the lumen to the size of a pinhole (Fig. 2).

Two months after the transverse colostomy operation, an anterior resection of the rectosigmoid colon was performed to excise the distal sigmoid stricture. Examination of the resected specimen revealed a dilated proximal segment with muscular hypertrophy (Fig. 3). The area of stricture had a 1-2-mm orifice. Microscopic sections showed that the stricture was caused by fibrous replacement and marked puckering of the submucosa and muscle wall, with numerous fresh and old eggs of Schistosoma mansoni in the fibrous tissue. The overlying mucosa contained ova in various stages of extrusion, but was not ulcerated.

A barium-enema study one month later, prior to closure of the colostomy, established the presence of a patent anastomosis and normal-appearing mucosa. At follow-up examination one year later, the patient had no gastrointestinal complaint and had gained 30 pounds in weight.
Patient 2: A 34-year-old black man was admitted because of massive upper gastrointestinal bleeding. At operation for control of a bleeding duodenal ulcer, the sigmoid colon was found to have multiple white, 1-2-mm subserosal nodular excrescences. Frozen-section examination of a biopsy specimen revealed numerous schistosomal granulomas within a thickened, fibrous serosa. Permanent section of an operative liver biopsy specimen revealed numerous schistosomal granulomas in various stages of evolution, as well as hepatic fibrosis. Following full recovery from the operation, the patient was treated with stibophen.

Patient 3: A 52-year-old Puerto Rican man, resident of New York City for the preceding ten years, was seen because of a full-thickness rectal prolapse, 5 cm long. The prolapse had occurred intermittently over the past five years but had always been reducible until two days prior to admission. Prior episodes had been accompanied by diarrhea, but at this time the patient had not had a bowel movement for two days.

Physical examination disclosed no abnormality except a markedly edematous 5-cm rectal prolapse. The rectal mucosa was obscured by a yellow-green pseudomembrane (Fig. 4). Reduction of the rectal prolapse in the operating room was accomplished utilizing general anesthesia. A temporary Thiersch-type circumferential wiring at the rectal sphincter was done to maintain reduction of the rectal prolapse. Sigmoidoscopy at the time of surgery failed to reveal any abnormality above the prolapse. Multiple rectal mucosal biopsies disclosed necrotizing ulceration of the mucosa with schistosomal granulomas in the mucosa and submucosa. The patient was treated with stibophen and on follow-up examination, was found to be doing well, without recurrence of the prolapse.

Comment

The erythematous, papular skin rash associated with penetration of the parasite and the rare involvement of the central nervous system are only two examples of the myriad clinical manifestations due to infestation with schistosomiasis. Virtually every system of the body can be involved by this parasite.

The usual clinical picture of schistosomiasis previously seen at this hospital has included mucous, bloody diarrhea associated with the intestinal phase of parasitic oviposition. Presinusoidal hepatic cirrhosis, sometimes complicated by bleeding esophageal varices, has been the usual chronic manifestation encountered. That