

Bowel Obstruction and an Apple-Core Lesion in an 18-Year-Old Man

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This paper reports a case of a young man who presented with gastrointestinal tract symptoms and radiographic findings consistent with carcinoma. In the resected colon, however, inflammatory bowel disease was defined.

CASE REPORT

The patient was an 18-year-old man with a 6-month history of intermittent, crampy diarrhea, melena, and a 30-pound weight loss. He denied fever, nausea, or vomiting. His vital signs were normal, and he had no abdominal tenderness, organomegaly, or palpable masses. Bowel sounds were normoactive. He had a microcytic hypochromic anemia, and a hemoglobin of 1.11 mmol/L (7.2 g/dL). Sigmoidoscopy was normal to 40 cm; esophagogastroduodenoscopy indicated a mild hemorrhagic gastritis, and biopsy showed congestion and benign lymphoid aggregates. An upper gastrointestinal tract series with small-bowel follow-through was normal. Stool cultures were negative.

Since the patient's bloody diarrhea continued, a subsequent barium enema was performed; the supine lateral radiograph from a single-contrast barium enema showed normal filling to the mid-descending colon. At this point, mucosal irregularities and a constricting lesion with overhanging shoulders characteristic of an apple-core lesion, suggestive of carcinoma, was demonstrated (Figure 1). Vigorous manipulation was required to pass the barium through to the transverse colon, where a second similar lesion was identified; the proximal colon could not be evaluated. Although the visualized lesion on colonoscopy also resembled a carcinoma, biopsy showed crypt ab-

cesses suggestive of inflammatory bowel disease. At exploratory laparotomy, three bulky constricting colonic lesions were identified: one in the descending colon, a larger focus in the mid-transverse colon, and a smaller lesion in the cecum. No abnormalities were palpable in the stomach or small bowel. Mesenteric lymph nodes, however, were enlarged. The patient underwent subtotal colectomy with removal of all constricting lesions and a primary anastomosis of the terminal ileum to the distal left colon.

The resected colon showed the features of Crohn's colitis (regional enteritis): skip areas of cobblestoning and "bear-claw" linear ulcerations parallel to the long axis of the colon, areas of normal mucosa, and thickening and edema of the bowel wall (Figure 2). Microscopically, a chronic, active transmural colitis, with noncaseating granulomas in the submucosa, serosa, and mesenteric lymph nodes, was identified. Fistulous tracts and abscesses were numerous. The appendix was involved. Neither dysplastic features nor tumor was seen.

The patient was discharged on the 7th postoperative day and is doing well on follow-up.

DISCUSSION

Idiopathic inflammatory bowel diseases, including Crohn's colitis, ulcerative colitis, and inflammatory bowel disease of infectious causes, are the primary etiologic considerations for colonic stricture disease in young men. Until segmental resection of the colon is available for pathologic determination, Crohn's disease and ulcerative colitis may be confused, since they share many features on colonic mucosal biopsy. *Entamoeba histolytica*, *Mycobacterium* species, and *Chlamydia trachomatis* are each organisms potentially capable of producing strictures but are also able to be cultured in stool. Although this patient had apple-core lesions characteristic of an annular adenocarcinoma, his youth and the multiple colonic le-

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Figure 1. Apple-core lesion in mid-descending colon.

sions present make the diagnosis of infiltrating adenocarcinoma unlikely.

Radiographically, the prototype of the malignant colonic stricture is that caused by an annular carcinoma narrowing the lumen abruptly; a portion of tumor can project into the area of normal colon and produce a shoul-



Figure 2. "Cobblestone" features in colon with transmural inflammation and adjacent normal bowel.

der defect resulting in the phenomenon of an apple-core appearance. The lumen of the malignant stricture is eccentric, and there is a loss of mucosal fold parallelism at the tumor margins. The stricture is usually 3 to 4 cm in length and rarely exceeds 6 cm.¹ The most common benign colonic stricture is that caused by Crohn's disease. It is classically symmetric with smooth lumens and tapered ends that fuse into the normal bowel and is present in up to 25% of the cases of Crohn's colitis. Apple-core lesions simulating colon carcinomas on barium enema examinations in patients with Crohn's disease have also been reported.² Pronounced local transmural inflammation and great overgrowth of postinflammatory polyps apparently cause these lesions.³⁻⁵ The strictures of ulcerative colitis are most frequent in the sigmoid colon and are radiographically similar to those of Crohn's disease. Since there is an increased risk of malignant change in both these inflammatory bowel disorders, the possibility of the presence of a coexisting neoplasm must be entertained.

Colonic strictures of infectious origin are most often related to tuberculosis, amebiasis, and lymphogranuloma venereum. Intestinal tuberculosis occurs in the ileocecal region in 90% of the cases; the stricture has no one characteristic appearance, although some have been described as taking on an hourglass configuration.^{6,7} *Entamoeba histolytica* (amebiasis) causes stricture in 2% to 8% of its chronic cases. The usual stricture is concentric with tapering ends and is longer than that of a carcinoma; but when shorter than the usual, it is eccentric and may show shoulder deformities mimicking carcinoma.⁸ Lymphogranuloma venereum (*Chlamydia trachomatis*) is a sexually transmitted disease that can cause proctocolitis. The strictures and fistulas that result in the rectosigmoid may resemble either carcinoma or Crohn's disease.⁹

The lesson that can be drawn from this case is that inflammation can simulate neoplasm throughout any organ or structure in the body. This process may occur in the lung, breast, intestinal tract, prostate, kidney, lymphatic system, and soft tissue tumors of the extremities. In this case involving the distal transverse colon, despite x-ray examination, cultures, colonoscopy, and other diagnostic studies, the definitive diagnosis and proper treatment required surgical therapy.

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