Arteritis Associated with Crohn’s Disease

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Abstract. We report the case of a 27-year-old white woman with Crohn’s disease associated with brachial artery occlusion. Only 2 similar cases of Takayasu-like disease in young women with Crohn’s disease were noted in the English literature.

Key words: Crohn’s disease, complications – Arteritis, brachial.

Greenstein et al. [1] classified the extraintestinal manifestations of Crohn’s disease into 3 main groups.

Group A was “colitis-related” lesions. These were more frequent in the colitis than in the ileitis patients, tended to wax and wane with the intestinal disease, and were felt to be “immunologically related” lesions. In this series these included joint (in 23% of their patients), skin (15%), eye (4%), and mouth (4%) abnormalities.

Group B lesions were those resulting from small bowel dysfunction and included malabsorption, gallstones, renal stones, and noncalcualous hydronephrosis.

Group C was nonspecific complications and included peptic ulcer, liver disease, osteoporosis, and amyloidosis. Clubbing of the digits and periostitis probably also belong in this group.

We present a case of brachial artery arteritis with stenosis in a young woman with Crohn’s disease and postulate that this represents a group A (immune) complication.

Case Report

One year prior to admission, this 27-year-old white woman presented with diarrhea, abdominal pain, arthralgia, and erythema nodosum. Small bowel X-rays showed typical Crohn’s disease of the terminal ileum. A second admission for a flare-up resulted in the institution of steroid therapy and an elemental diet. After discharge she developed erythema nodosum, periarticular swelling of the fingers of the left hand, and pain and numbness of the medial aspect of the left hand. She also had nausea, vomiting, bloating, and right lower quadrant pain. Her steroids were increased and she was readmitted.

Physical examination revealed slight right lower quadrant tenderness, but an otherwise normal abdomen. There was no palpable brachial or radial pulse on the left side. The left hand was tender and there was numbness and pain at the medial aspect of the hand, suggesting ulnar neuropathy. The nail beds of the left hand showed splinter hemorrhages, and there were oval periungual infarcts. The erythema nodosum had cleared.

Extensive laboratory investigation revealed an erythrocyte sedimentation rate that never was above 40. Rheumatoid factor, cryoglobulins, lupus erythematosus cell preparation, hepatitis B serology, ASO titer and antinuclear antibody studies, and immunoglobulin assay were all normal. An upper GI and small bowel follow-through showed Crohn’s disease of the terminal ileum and suggested involvement of the duodenum by Crohn’s disease (Fig. 1). Angiography showed a very high grade stenosis of the proximal brachial artery several centimeters long (Fig. 2). The aorta and its major branches were otherwise normal. Muscle biopsy was normal. Intravenous Solumedrol® (methylprednisolone sodium succinate) and heparin were begun, and the pain and numbness in the hand disappeared after several days. The pulses did not improve.

The patient was discharged on prednisone and the dose was tapered to 30 mg/day. She was admitted to another hospital where the segmental stenosis of the brachial artery was resected. The pathological specimen showed changes consistent with an arteritis with fibrinoid material deposited on the intima, edema and lymphocyte infiltration of the intima and media, capillary invasion of the deep intimal layers, and several areas suggesting fibrinoid necrosis (Fig. 3).

Discussion

Arterial lesions in Crohn’s disease are well known. Knutson et al. [2] refer to “the constancy of obliterator changes in Crohn’s disease” as a differentiating feature from ulcerative colitis where arterial changes make only a “token appearance.” They describe 2 major types of changes. Degenerative changes occurred in all their cases and involved both arteries and veins. “Irregular mucosal thick-
Giant cell arteritis in the subserosal arteries of minimally involved segments of gut was reported by Teja et al. [3]. They hypothesized a collagen vascular disease, possibly representing an immunologic complication of Crohn’s disease.

A completely different arterial process associated with Crohn’s disease but remote from the gut is cutaneous polyarteritis nodosa [4-8]. In this condition painful nodules in the subcutaneous tissue are found in the lower leg. Livedo reticularis may be associated. Myositis and polyneuritis also occur in some patients, but visceral involvement does not occur and the prognosis is much better than in systemic polyarteritis nodosa. The underlying change is a panarteritis with fibroid necrosis. Giant cells and granulomas may be present. Kahn et al. [5] reviewed 11 patients with coincident Crohn’s disease and cutaneous polyarteritis nodosa and found an age range from 16 to 31 years.