Case Reports

Intestinal Ischemia Secondary to Thromboangiitis Obliterans

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A 38-year-old woman presented with a 10-month history of postprandial abdominal pain and weight loss. She smoked two packs of cigarettes a day, but her history did not indicate diabetes mellitus, hyperlipidemia, or hypercoagulability. A lateral aortogram documented complete occlusion of all three mesenteric arteries but showed no evidence of atherosclerosis, arteritis, or medial fibroplasia. Two retrograde aortomesenteric grafts, one to the superior mesenteric artery and another to the meandering mesenteric artery, utilizing the greater saphenous vein were placed. Pathologic examination of the inferior mesenteric artery demonstrated changes that were considered diagnostic of thromboangiitis obliterans. We found only 10 confirmed cases of thromboangiitis obliterans involving the mesenteric vessels in the English language literature. The present case appears to be the first involving a woman and the only one in which the main trunk of all three mesenteric vessels was involved. (Ann Vasc Surg 1993;7:354-358.)

Thromboangiitis obliterans (TAO), or Buerger's disease, is an uncommon disorder that characteristically occurs in young male smokers and results in segmental occlusion of small- to medium-sized distal arteries of both upper and lower extremities. At one time it was considered merely a variant of atherosclerosis and its existence as a distinct pathologic entity was questioned. However, its characteristic clinical features—its occurrence in young male smokers who have no other evidence of atherosclerosis, its tendency to involve the upper as well as the lower extremities, and its association with migratory superficial thrombophlebitis—plus its unique pathologic features have convinced most observers that it is a real, albeit unusual, cause of arterial occlusion. Although Buerger's monograph mentions the possibility of mesenteric vascular involvement, TAO almost never involves the aorta and its principal branches. We report a unique case of a young female smoker who had no peripheral manifestations of TAO but who presented with chronic mesenteric vascular insufficiency secondary to occlusion of all three mesenteric branches of the abdominal aorta by this disease.

CASE REPORT

This 38-year-old woman first presented with a 6-year history of vague, episodic abdominal pain. The patient smoked two packs of cigarettes a day (40 pack-years), but she had no evidence of diabetes mellitus, hyperlipidemia, hypercoagulability, thrombophlebitis, or hypertension. She denied taking birth control pills or ergot-containing drugs.

At 18 years of age she had undergone a splenectomy for idiopathic thrombocytopenic purpura. At 33 years of age she complained of burning epigastric pain, which was thought to be consistent with a peptic ulcer diathesis, and she was treated with sucralfate and H2-blockers.

Ten months prior to the present admission the
patient began complaining of increasing abdominal pain that was exacerbated by eating, but she initially denied any weight loss. An abdominal CT scan was normal, but an upper gastrointestinal series documented thickened folds in the duodenum and small bowel. An oral cholecystogram showed thickening of the gallbladder wall but demonstrated no stones. Esophagoduodenoscopy showed some inflammation of the mucosa but was otherwise unremarkable, and an air-contrast barium enema was normal.

Two months earlier her abdominal pains increased and she underwent laparoscopic cholecystectomy. Pathologic examination of the resected gallbladder was consistent with acalculous cholecystitis. She noted no improvement in her symptoms following cholecystectomy, and 1 month later she underwent exploratory laparotomy that revealed no gross abnormalities. Intraoperative small bowel endoscopy documented shallow ulcerations in the ileal mucosa, which were biopsied. The pathologic findings were nonspecific but consistent with ischemic damage. As might be expected with Crohn's disease, no granulomas were seen.

Her symptoms persisted and she lost 34 pounds over the ensuing 2 months. One week prior to transfer an abdominal x-ray demonstrated pneumatosis intestinalis of the small bowel and an abdominal aortogram was performed. The aorta and both renal arteries appeared normal (Fig. 1). However, the lateral view demonstrated complete occlusion of all three mesenteric branches at their origin from the aorta. There was no reconstitution of the main celiac trunk, and the only patent portion of this vessel was a small right hepatic branch that appeared to fill via a collateral from the phrenic artery. A prominent meandering mesenteric artery arose from collateral connections of the left hypogastric artery and filled the middle colic branch of the superior mesenteric artery (Fig. 2). However, the superior mesenteric artery itself remained occluded for an additional 4 cm beyond the middle colic artery, at which point it appeared to fill via distal collateral connections. Following this study the patient was transferred to our institution.

On admission the patient complained of diffuse abdominal pain and appeared chronically ill. Her abdomen was slightly distended and diffusely tender with some rebound tenderness. Peripheral pulses were all present and ankle-brachial indices were normal bilaterally. She was afebrile and had stable vital signs, but the white blood count was elevated to 12,400 with a normal differential count and the erythrocyte sedimentation rate was 52 mm/hr. The fasting blood sugar level was 75 mg/dl. The platelet count of 718,000 was attributed to her prior splenectomy. Prothrombin time was 14.2 seconds (control, 12.4 seconds), but partial thromboplastin time was normal. Protein C and antithrombin III were slightly depressed (60% to 70% of normal) but protein S was normal. These abnormalities were attributed to the patient's malnutrition since her serum albumin was only 2.4 g/dl. No family history

**Fig. 1.** A, Abdominal aortogram demonstrating a normal aorta and renal arteries. B, Lateral view documenting occlusion of all three mesenteric branches (arrows) at their origin.