Aneurysm of the Inferior Mesenteric Artery
Associated with Occlusion of the Celiac Axis
and Superior Mesenteric Artery

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The authors report a case of aneurysm of the inferior mesenteric artery encounted in a 38-year-old man, associated with occlusion of the celiac axis, the superior mesenteric artery and the inferior mesenteric artery distal to the aneurysm. All three arteries were revascularized. In spite of failure in the bypass of the superior mesenteric artery, the patient remained symptom free until his demise four years later, from a probable myocardial infarction. Only 11 cases of aneurysms of the inferior mesenteric artery have been reported in the literature. The causes, diagnosis and treatment of these uncommon lesions are discussed. When occlusion of the celiac axis is associated with that of the superior mesenteric artery, a complete mesenteric revascularization should be attempted whenever possible. (Ann Vasc Surg, 1986, 1, 253-257).

KEY-WORDS : Inferior mesenteric artery. — Aneurysms.

Aneurysms of the inferior mesenteric artery are rare. Only 11 documented cases have been published in the literature [1-9]. The case report which follows is interesting in that this aneurysm was associated with occlusion of the celiac axis, the superior mesenteric and the distal inferior mesenteric artery.

CASE REPORT

A 38 year-old man, heavy cigarette smoker, was hospitalized in 1979 for aggravation of ischemia of his legs present since age 31. Previous angiograms in 1972 and 1975 had documented femoropopliteal occlusions. Although a well developed Riolan's arcade was disclosed, no lateral views were obtained.

On examination, only the femoral pulses were felt. Physical examination of the abdomen and neck was normal. A new aortogram documented occlusion of both superficial femoral arteries with poor run-off. A large (7 x 3 cm) pear-shaped aneurysm of the inferior mesenteric artery was noted, situated at 15 mm from the origin of the artery (Fig. 1 and 2). Lateral views demonstrated a tight stenosis at the origin of the inferior mesenteric artery extending for one cm. Distal to the aneurysm, the inferior mesenteric artery was thrombosed. A very large (seven mm diameter) Riolan's anastomotic arcade was seen to arise directly from the aneurysm. The celiac axis and superior mesenteric artery were occluded at their origins. Circulation ran backwards through Riolan's arcade to vascularize the hepatic and superior mesenteric arteries via the peri-pancreatic arterial network. The renal arteries were normal. A coronary angiogram documented diffuse involvement of all three main trunks, small caliber vessels throughout and disturbed left ventricular function. No evidence of any systemic inflammatory condition was found.

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Surgery was performed on December 10, 1979 via a midline xiphopubic laparotomy. The aorta and iliac arteries were supple. No pulsations could be felt in the mesenteric or hepatic vasculature. The aneurysm was resected and the left colic artery was reimplanted into the infrarenal aorta. The superior mesenteric and proper hepatic arteries were revascularized by autologous venous bypasses implanted into the infrarenal aorta just above the left superior colic artery.

Histopathological examination revealed two types of lesions (Fig. 3). In one part of the specimen, the intima was thickened while the media was normal in thickness and structure. In the other part of the specimen, the intima was practically absent and the media was atrophic with disappearance of elastic lamelae and rarefaction of muscle cells. The pathologist concluded that the aneurysm was not atheromatous in origin, but rather was related to the disappearance of mechanical support in the media replaced by intercellular mucoid substance.

Postoperatively, the patient did well. A postoperative arteriogram in February, 1980, showed that the left colic