

## VASCULAR IMAGES

### The meandering mesenteric artery or central anastomotic artery

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A 50-year-old woman who was a heavy smoker presented with intermittent claudication of both lower extremities. An abdominal aortogram with bilateral lower extremity runoff demonstrated marked arteriosclerotic occlusive disease of the superficial femoral arteries. It also demonstrated a huge meandering mesenteric artery as an important collateral system (A). Note that the inferior mesenteric artery (IMA) is dilated and may be seen in continuity with an enlarged left colic (LCA) and marginal artery (MA).

Despite the excellent filling of the abdominal aortic branches, the superior mesenteric artery was not visualized. The lateral projection of the same abdominal aortogram (B) shows severe stenosis of the celiac artery (CA) at its origin (arrow) and of the superior mesenteric artery (SMA) just downstream from its origin (arrow). The origin of the inferior mesenteric artery is not stenotic but rather markedly enlarged as the beginning of the central anastomotic mesenteric artery or, as it is sometimes called, the meandering mesenteric artery. No symptoms referable to the abdomen were present.

The recognition of a meandering mesenteric artery of the colon is sufficient evidence by itself to conclude that major abdominal arterial stenosis or occlusion is present. Such arterial disease is either severe stenosis or occlusion of the celiac and superior mesenteric arteries as seen only by a lateral aortic projection or a Leriche aortic occlusion just below the renal arteries. Its presence with mesenteric occlusive disease means that blood flow in the enlarged central anastomotic artery is upward from the open inferior mesenteric artery to supply the branches of the stenotic celiac and superior mesenteric arteries. When the disease is an occluded aorta, the collateral flow is from above downward to supply the lower extremities. Stenosis or occlusion of the celiac and superior mesenteric arteries is commonly associated with abdominal angina or loss of viability of the intestine. However, it need not cause symptoms as demonstrated in this patient. The central anastomosing mesenteric artery can enlarge enough to furnish adequate blood flow between the superior and inferior mesenteric circulations when the two major trunks are severely stenotic or even occluded.<sup>1,2</sup>

If this central anastomotic artery is interfered with during nonvascular abdominal surgery by thrombosis or division, acute ischemia and gangrene of the intestinal system will result. Likewise, division of an enlarged anastomotic artery without its reimplantation into the abdominal aorta or aortic graft may result in infarction of the bowel that it supplies. Its recognition on abdominal aortography or at laparotomy (C, Cover) is of great importance. This anastomotic pathway explains why surgical division of the inferior mesenteric artery has, on occasion, even resulted in gangrene of the legs when distal aortic or iliac artery obstruction was present. Our patient underwent bilateral femoral-popliteal bypasses for claudication and a subsequent nonvascular abdominal operation. At which time we obtain photo C, Cover. We also continued to monitor her for any symptoms of mesenteric ischemia.

More commonly, the ability of the central anastomotic artery to enlarge may be limited, and in such patients, its presence is especially valuable in signaling impending bowel ischemia even before intestinal angina may appear. In such cases, we recommend prophylactic concomitant revascularization of the compromised mesenteric vessels during aortic reconstructive procedures.<sup>3</sup>

#### REFERENCES

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