Superior Mesenteric Venous Aneurysm

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The case of a 50-year-old woman with an extremely rare venous malformation of the portal venous system is reported. The patient presented with a true aneurysm of the superior mesenteric vein, which has thus far been reported in no more than eight cases worldwide. This malformation may be congenital or acquired. Secondary aneurysms are thought to be due to liver disease, portal hypertension, trauma, or inflammation. Aneurysms of the portomesenteric venous system may be asymptomatic or give rise to severe, often dramatic conditions such as crampy abdominal pain, jaundice, and upper gastrointestinal hemorrhage secondary to portal hypertension. The diagnosis is usually made by ultrasound (B-mode or color flow Doppler), CT scan, and MRI. Invasive procedures such as venous phase mesenteric arteriography or splenoportography may be helpful in confirming it. In our opinion aneurysms of the portal venous system, even if they are congenital and (still) asymptomatic, require early surgical control because the prognosis for patients with these aneurysms is unpredictable and potential complications (e.g., portal hypertension, fistula, contained perforation, or rupture) may be fatal. In the case presented the mesenteric venous aneurysm was resected and the confluent veins were reconstructed. (Ann Vasc Surg 1996;10:582-588.)

CASE REPORT

A 50-year-old woman, who was known to have a contracted right kidney, underwent follow-up ultrasound examination in December 1992 and was found to have a cystic pancreatic lesion, which was initially thought to be a pancreatic pseudocyst. Further evaluation by means of CT imaging with a bolus injection of contrast medium showed aneurysmal enlargement of the superior mesenteric vein close to its junction with the confluent veins measuring 3.0 cm in diameter and 4 cm in length (Fig. 1).

The patient was referred to the Department of Vascular and Thoracic Surgery at the Zentralklinikum Augsburg in January 1993. On admission, she was found to be well nourished and in good general condition. She reported a history of right kidney contraction secondary to recurrent pyelonephritis and hepatitis A during childhood. Vascular risk factors included smoking (20 cigarettes/day) and borderline hyperlipidemia (hypercholesterolemia). Clinically, the abdomen appeared normal. It was soft and no palpable pulsatile mass was detected. The vasculature was also normal. Peripheral pulses were palpable and absence of a carotid bruit was noted. B-mode ultrasound images of the upper abdominal organs were normal with no evidence of parenchymal liver damage or splenomegaly. Color flow Doppler ultrasonography confirmed the presence of a superior mesenteric venous aneurysm close to the venous junction. Portal and hepatic venous flow was normal (Fig. 2). On preoperative venous phase mesenteric arteriography, the superior mesenteric vein was dilated anteriorly to a diameter of approximately 3.0 cm (Fig. 3). There was no arteriographic evidence of (partial) thrombotic occlusion of

Venous aneurysms are rare. As of 1982 only 500 cases had been documented in the international literature. Most of them were localized in the neck and legs. Among aneurysms of the visceral veins, those affecting the portal venous system constitute the most common type. To date only 30 cases of extrahepatic portal venous aneurysms have been recorded worldwide. Aneurysms of the superior mesenteric vein are even less common. No more than eight cases have been reported in the international literature. Aneurysms are defined as circumscribed dilatations of a blood vessel. True aneurysms of the portal venous system may be saccular or fusiform. Although the mean diameter of the portal vein in normal adults is known to be 0.89 cm (range 0.64 to 1.21 cm), that of the mesenteric vein is still uncertain. In the case reported herein, a 50-year-old woman presented with a mesenteric venous aneurysm measuring 3.0 cm in diameter and approximately 4.0 cm in length, which was incidentally detected by an ultrasound examination performed to evaluate a contracted kidney.

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Fig. 1. Preoperative CT scan of the upper abdomen showing aneurysmal dilatation of the superior mesenteric vein anterior and inferior to the pancreatic head (after contrast enhancement). Liver and spleen are of normal size and structure.

the aneurysm or significant venous stenosis. Drainage into the portal vein was unimpeded. The patient denied having any subjective complaints.

Surgery was performed in July 1993. Intraoperatively an aneurysm of the superior mesenteric vein was detected near the venous junction. It was located anteriorly at the inferior margin of the pancreas and several minor tributaries arose from the mesocolon. The total size was approximately $5 \times 3$ cm (Fig. 4). The anterior portions of the aneurysm were resected in a wedge-shaped fashion and the cut edges were united by single sutures passed obliquely. This provided for an adequate caliber match with no need for a patch or interposition graft (Fig. 5).

Histologically the resected material consisted of a severely ectatic vessel wall with a thin epithelial lining.

Postoperative mesenteric arteriography demonstrated successful anatomic reconstruction of the superior mesenteric vein at its junction with the confluent veins (Fig. 6). Shortly after surgery the patient went into heart failure. This was the result of a previously well-compensated mitral valve anomaly the manifestations of which included orthopnea, pleural effusions, and signs of pulmonary venous congestion. Cardiac catheterization, performed electively as soon as the acute symptoms were controlled, showed a combined mitral valve abnormality with a tight stenosis to a flow surface of $0.7$ cm$^2$. In October 1993 the diseased

Fig. 2. Preoperative color flow Doppler sonogram showing an aneurysm of the superior mesenteric vein.