Aneurysm of the superior mesenteric vein: Case report with 5-year follow-up and review of the literature

Nelson Wolosker, MD, PhD, Antonio Eduardo Zerati, MD, Kenji Nishinari, MD, Mario de Melo Galvão Filho, MD, PhD, and Angela Maria Borri Wolosker, MD, PhD, São Paulo, Brazil

Venous aneurysms are less common than arterial aneurysms in clinical practice, and the occurrence of isolated cases is a topic for publication. Aneurysms of the superior mesenteric vein are rare, and their origin is unknown. Many aneurysms are asymptomatic, and the diagnosis is established from radiologic findings. Others are diagnosed after complications such as gastrointestinal bleeding or thrombosis with associated abdominal pain. Because of the rarity of this disease and consequent absence of standard treatment, therapy must be adapted to fit each case. We present a case report of an aneurysm of the superior mesenteric vein. The diagnosis of this anomaly was made after investigation of abdominal pain. Computed tomography (CT) scans demonstrated the mass. Clinical treatment was administered, and no aneurysm growth was observed after 5 years of follow-up. (J Vasc Surg 2004;39:459-61.)

References

Aneurysms of the superior mesenteric vein (SMV) are rare. Since the first description by Schild et al in 1982, only 10 cases have been published.

We describe another patient with idiopathic aneurysm of the SMV, with clinical follow-up of 5 years.

CASE REPORT

The patient was a 56-year-old white woman, 1.67 m tall and weighing 75 kg (body mass index, 26.9). At the first medical consultation, in July 1998, she complained of diffused colicky abdominal pain that had been present for 2 years. This was not accompanied by any alteration in intestinal habits, increase in abdominal volume, tenesmus, or weight loss. There was a history of intestinal diverticulosis, but no family history of pancreatitis, abdominal trauma, or similar complaint.

Physical examination revealed good general health. Findings at thorax auscultation were normal. There was no palpable mass or pain in any of the abdominal quadrants. Vascular physical examination demonstrated normal arterial pulses and absence of edema. There was no evident collateral venous circulation in the abdomen wall and lower limbs.

To investigate the cause of this indeterminate abdominal pain, computed tomography of the abdomen was performed in July 1998, which revealed that the SMV was dilated to 3.5 cm, without internal thrombus (Fig 1).

Angiography of the superior mesenteric artery was indicated to rule out the possibility of false aneurysm or other concomitant vascular malformation and to improve study of the aneurysm shape. The arterial system was normal, but a fusiform aneurysm was observed in the venous phase (SMV; Fig 2).

There was no evidence of other venous or arterial aneurysms in other areas of the body at physical examination and radiologic imaging.

Inasmuch as the pain was not attributable to the aneurysm, because it was not thrombosed, ruptured, or compressing adjacent structures, we chose to observe the patient with clinical follow-up, along with prescribed analgesic and antispasmodic drugs (N-butilescopalamin).

Gadolinium-enhanced magnetic resonance angiography was performed annually. The most recent angiogram, obtained in March 2003, showed no alterations in dimensions of the SMV aneurysm (Fig 3).

The patient had relief of colic, but occasionally the pain recurs and is clinically treated in the same way.

DISCUSSION

Venous aneurysms are not common in clinical practice, and the occurrence of isolated cases is a topic for publication. Idiopathic aneurysms of the SMV are rare; only 10 cases have been published to the present time (Table).

Most patients with intra-abdominal venous aneurysm seek medical assistance because of vague abdominal pain. Some patients may have gastrointestinal bleeding, acute venous occlusion, or pulmonary embolism. The most frequent symptom in seven cases described was vague abdominal pain, which was usually recurrent and localized in the right upper quadrant. These complaints are probably not related to venous dilatation. Two patients had no symptoms; and two had complications related to the aneurysm. One of these two patients had acute thrombosis leading to severe epigastric pain radiating to the back in association with vomiting, and the other patient had upper gastrointestinal bleeding. Physical examination provided no specific data in these patients, because the SMV was located deep within the abdomen.

Differing from most vascular diseases, in which anamnesis and physical examination are sufficient to establish the cause and topographic diagnosis, the diagnosis of SMV aneurysm must be established from radiologic findings.
In our patient, SMV aneurysm was detected with abdominal imaging (ultrasonography, CT) during investigation of the abdominal pain.

In most cases reported, sonography was the first imaging technique performed, because it is noninvasive. The aneurysm appears as an anechoic structure near the head of the pancreas. Color Doppler ultrasound scans show the vascular nature of the mass.

CT scans reveal the size and extent of the lesion, and confirms its vascular origin, but requires use of iodinated intravenous contrast medium. Magnetic resonance imaging renders images similar to angiograms. Venous-phase mesenteric angiography can be performed to confirm the diagnosis.5

Elevation of bilirubin and transaminase concentrations in two cases described5,6 could be a consequence of extrinsic compression of the extrahepatic bile duct. In the case described by Fulcher and Turner,5 CT scans revealed that the dilated extrahepatic bile duct terminated at the level of the SMV aneurysm.

Venous aneurysms can be saccular, fusiform, or diverticular. Cholankeril et al4 and Liessi7 described fusiform aneurysms, as in our case, and Mathias et al8 described a saccular form. The other articles did not mention the shape of the lesion.

In the case reported by Fulcher and Turner,5 there was an association between SMV aneurysm and portal vein dilatation. In eight patients, including our patient, the SMV aneurysm was located near its confluence with the splenic vein.1,3,4,6-9

The origin of these aneurysms is unknown, but some theories have been put forward. Weakness of the vessel wall may give rise to venous dilatation, even under normal venous pressure.1 Another possibility involves an embryologic mechanism; that is, the persistence of a remnant of the right vitelline vein during development of the portal system.

Fig 1. Computed tomograph of the abdomen shows superior mesenteric artery aneurysm (arrow).

Fig 2. Venous angiogram shows superior mesenteric artery aneurysm.

Fig 3. Control magnetic resonance angiogram of superior mesenteric artery aneurysm 5 years after original diagnosis.
forms a diverticulum, which may persist and develop into an aneurysm. Among acquired causes, adjacent inflammatory disorders, such as acute pancreatitis, may cause weakening of the vessel wall from lithic enzymes. The case reported by Lopez-Rasines et al was the only one in which there was a history of acute pancreatitis, 1 year before diagnosis of the SMV aneurysm.

Since the number of cases of SMV aneurysm is small, the natural history and clinical evolution of such aneurysms are not well-defined.

Inasmuch as most patients had nonspecific symptoms, the treatment option chosen was follow-up with regular imaging examinations. Because SMV aneurysm is a rare anomaly and its long-term evolution is not known, patients should be clearly informed of possible complications, including rupture and thrombosis. Only two patients underwent surgical repair, elective aneurysmorrhaphy in one patient and simple resection of the aneurysm because of acute thrombosis in the other patient.

We have presented a rare case of idiopathic aneurysm of the SMV, which at 5-year follow-up is evolving with no complications.

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Sex</th>
<th>Age (y)</th>
<th>Symptom</th>
<th>Transaminase concentrations</th>
<th>Diagnosis</th>
<th>Treatment</th>
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<td>Schild</td>
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<td>F</td>
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<td>Wolosker (present case)</td>
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CT, Computed tomography; PhE, MRA, magnetic resonance angiography; US, ultrasound.

REFERENCES
