A 65-year-old male patient presented with mild postprandial discomfort for 2 years. Blood laboratory tests were normal and there was no history of pancreatitis, hepatic disease or abdominal trauma. Following the ultrasound diagnosis of a pancreatic cyst the patient underwent abdominal CT.

**Imaging Findings:**

Contrast-computed tomography of the abdomen revealed a saccular dilatation of 3.9 cm of the superior mesenteric vein (SMV) below the confluence with splenic vein, without internal thrombus (Fig. 1, 2, 3). Additional findings were two diverticula of second portion of duodenum with air-fluid levels (Fig. 2, 4).

**Discussion:**

The superior mesenteric vein (SMV) belongs to portal venous system, presents with a diameter of up to 1.2 cm and it is defined as aneurysmatic when it exceeds 1.4 cm in diameter together with loss of wall parallelism [1]. Morphologically there are three types of venous aneurysms: fusiform, saccular and diverticular [2]. SMV aneurysm is the rarest of all portal venous system aneurysms, which represent only 3% of all aneurysm of the venous system [3]. The pathogenesis of this anomaly is not clear: both congenital and acquired causes are described in the literature. The congenital causes include an incomplete regression of the caudal part of the right vitelline vein which leaves a diverticular bud that is the nucleus for the future ectasia and an inherited weakness of the walls of the vein [1]. The acquired causes reported in the literature are: chronic liver disease, portal hypertension, pancreatitis, trauma and surgery [3]. Portal venous system aneurysms and in particular SMV aneurysms, are in the majority of the cases asymptomatic or manifest with vague abdominal pain. The clinical aspects are closely related to the size of aneurysm, because small aneurysms are often asymptomatic, instead large aneurysms are most probably associated to complications, i.e. thrombosis, portal hypertension, aneurysmal rupture, biliary tract obstruction and duodenal compression [3]. Because of most SMV aneurysms are clinically silent, imaging plays an important role in their detection, that often occurs incidentally, as well as in our patient.

Color-Doppler sonography is considered an accurate technique in the diagnosis and follow up of SMV aneurysms, providing both anatomic and haemodynamic information. On ultrasound examination aneurysm and thrombosed aneurysm may mimic respectively cystic or solid pancreatic mass, as well as in our case. CT, with intravenous injection of iodinated contrast medium, and MRI, offering multiplanar capability, reveal the size and the extent of the
aneurysm and define its vascular origin [1, 3].

Because of SMV aneurysms are a rare anomaly, their evolution is unknown and their management is not standardized. Asymptomatic aneurysms can be managed conservatively with follow-up imaging. Surgery is considered for symptomatic aneurysms: shunt surgery in case of portal hypertension and aneurysmorrhaphy in case of absence of portal hypertension [4].

In our case patient’s symptoms were not attributable to SMV aneurysm, because it was not thrombosed, ruptured, or compressing adjacent structures, whereby we chose to observe the patient with imaging follow-up.

**Differential Diagnosis List:** Superior mesenteric vein aneurysm, Pancreatic solid mass, Pancreatic cystic mass

**Final Diagnosis:** Superior mesenteric vein aneurysm.

**References:**


Description: Cross sectional CT image shows aneurysm of SMV, with a diameter of 3.9 cm. Origin: Tricarico C, Radiological Center "Raggi X", Modugno (Ba), Italy.
**Description:** Coronal MIP image shows aneurysm of SMV and two diverticula of second portion of duodenum. **Origin:** Tricarico C, Radiological Center "Raggi X", Modugno (Ba), Italy.
**Figure 3**

**Description:** 3D Reconstruction shows SMV aneurysm located below the confluence with the splenic vein. **Origin:** Tricarico C, Radiological Center "Raggi X", Modugno (Ba), Italy
Description: Cross sectional CT image shows two diverticula of second portion of duodenum with air-fluid levels. Origin: Tricarico C, Radiological Center "Raggi X", Modugno (Ba), Italy