

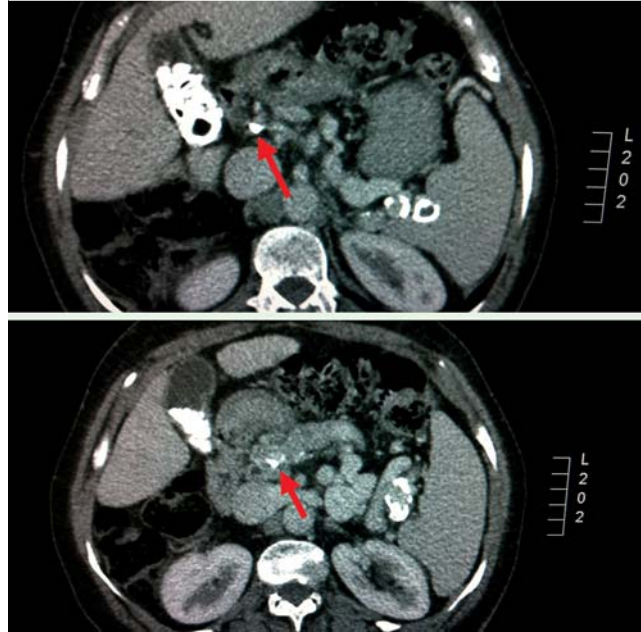
## Calcified thrombosis in the portal system mimicking choledocholithiasis and diagnosed by endoscopic ultrasound

A 67-year-old woman with abdominal pain and jaundice for the preceding 6 months was referred for endoscopic ultrasound (EUS) to evaluate the presence of choledocholithiasis. The patient had a history of diabetes, schistosomal infection, and chronic hepatitis C (cirrhotic portal hypertension). A computed tomography (CT) scan showed cholelithiasis, calcified thrombosis in the portal system, and possible choledocholithiasis (• Figs. 1, 2). EUS showed cholelithiasis and calcified thrombosis in the portal and splenic veins. Evidence of choledocholithiasis was not observed (• Figs. 3–6).

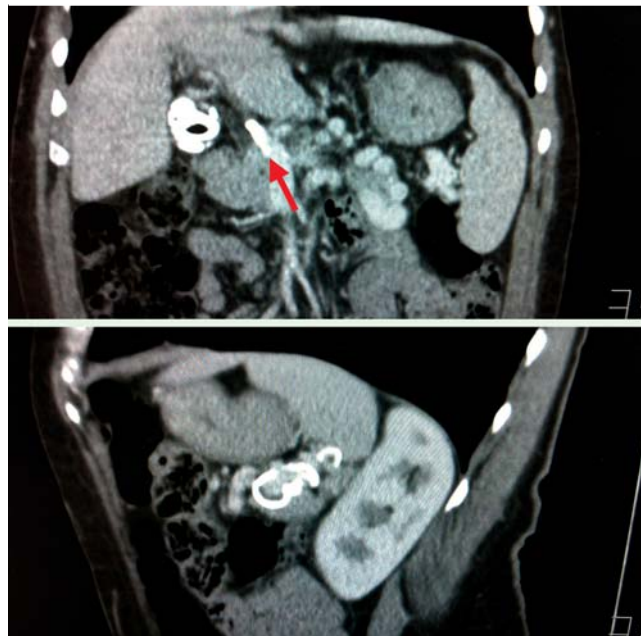
Calcification in the portal vein system has been previously described in patients with longstanding portal hypertension. Demonstration of such calcification on imaging studies is extremely rare. The first case of portal vein calcification was reported by Moberg in 1943 [1]. The calcium deposition has been reported as being observed in well-organized thrombi attached to the interrupted intima in most of the cases described [1–4].

In a clinical review published in 1993, Kawasaki et al. [5] collected data from 21 patients with calcification of the portal venous system reported between 1940 and 1990. The calcified lesions were found in the portal vein in 100% of patients, in the splenic vein in 62%, and in the superior mesenteric vein in 33%. All of the patients showed signs and symptoms of portal hypertension. Calcification was identified on imaging examinations and was later confirmed by autopsy, surgery, or angiography.

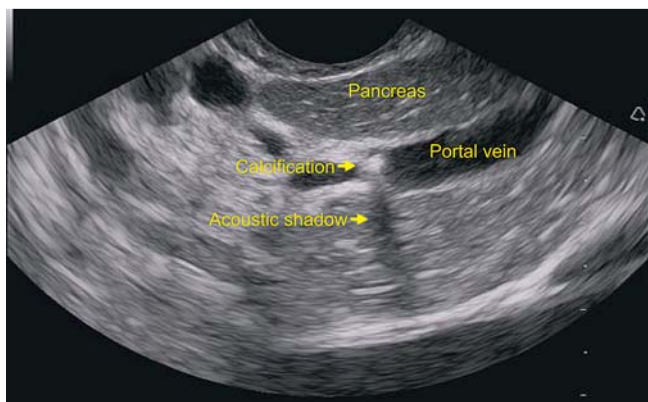
A knowledge of the possible vascular source of these calcium deposits is important in order to avoid diagnostic confusion with other diseases, such as choledocholithiasis, chronic pancreatitis, pancreatic ductal calcification, pancreatic pseudocyst with parietal calcification, and cystic neoplasm of the pancreas. In addition, recognition of extensive calcification in the wall of the portal vein or its tributaries may have therapeutic significance, because its presence may hinder the creation of a venous anastomosis in a porto-systemic shunt [4].



**Fig. 1** Computed tomography (CT) scan showing cholelithiasis, calcified thrombosis (arrows) in the portal system, and possible choledocholithiasis, in horizontal section.



**Fig. 2** Computed tomography (CT) scan showing cholelithiasis, calcified thrombosis (arrow) in the portal system, and possible choledocholithiasis, in coronal (top panel) and sagittal (bottom panel) view.



**Fig. 3** Endoscopic ultrasound (EUS; stomach view) showing calcified thrombosis in the portal vein and an acoustic shadow.

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**Competing interests:** None

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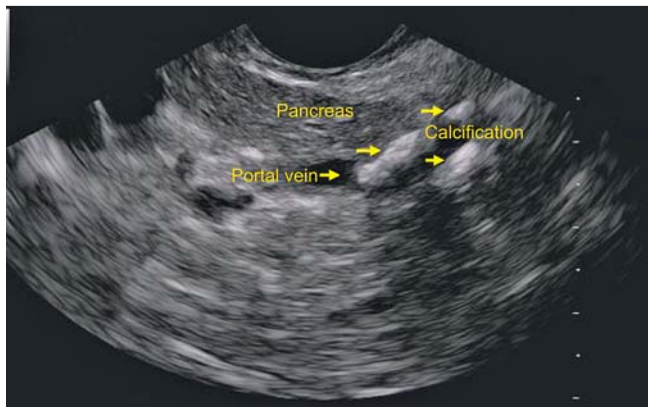
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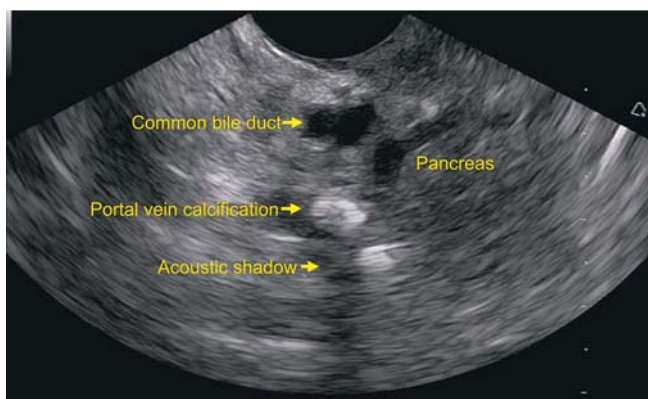
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**Fig. 4** Endoscopic ultrasound (EUS; stomach view) showing calcified thrombosis (arrows) in the portal vein.



**Fig. 5** Endoscopic ultrasound (EUS; duodenal view) showing calcified thrombosis in the portal vein and main bile duct without stones.



**Fig. 6** Endoscopic ultrasound (EUS; stomach view) showing calcified thrombosis (opposing arrows) in the portal vein at the hepatic hilum and an acoustic shadow.