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## Case Report

# Atraumatic splenic rupture precipitated by splenic vein thrombosis

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## ABSTRACT

We present the case of a 59-year-old man with atraumatic splenic rupture because of splenic vein thrombosis who was successfully treated with splenic artery embolization.

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## Case Report

A 59-year-old man with medical history significant for vasculopathy and alcohol abuse presents with elevated lipases and diagnosed with pancreatitis. Because of pain out of proportion on physical examination, the patient was suspected of having mesenteric ischemia. Doppler imaging of the mesenteric vessels was ordered, and subsequently revealed multiple thrombi in the superior mesenteric vein, portal vein, and the splenic vein (Fig. 1). On hospital day 2, the patient experienced a drop in hemoglobin/hematocrit of 11.7 g dL<sup>-1</sup>/34.2–7.07 g dL<sup>-1</sup>/20.0 with associated decline of blood pressure to 85/45 mm Hg. The patient was transfused 3 units of packed red blood cells. Abdominal computed tomography (CT) demonstrated a large splenic subcapsular hematoma with a moderate amount of hemoperitoneum and active site of extravasation from the spleen (Fig. 2). In addition, a pseudoaneurysm arising from the distal splenic

artery was discovered, and the extent of portal and splenic venous thrombosis was appreciated (Figs. 3 and 4). Because of the patient's hemodynamic instability and comorbidities, the patient was an unfit candidate for general anesthesia and general surgery. Interventional radiology was consulted for splenic artery embolization.

Although no active contrast extravasation from the splenic artery was identified, splenic arteriography did discover a 6 to 7-mm pseudoaneurysm near the distal aspect of the splenic artery (Fig. 5). The catheter was positioned proximal to the pseudoaneurysm, and subsequently, a 7-mm Amplatzer vascular plug was deployed to staunch blood flow into the pseudoaneurysm. A 15-minute delayed angiography demonstrated very scant contrast opacification distal to the plug. Vascular flow was maintained proximal to the Amplatzer plug to ensure continued perfusion to the distal pancreatic territory (Fig. 6). On postprocedure day 1, the patient's hemoglobin and/or

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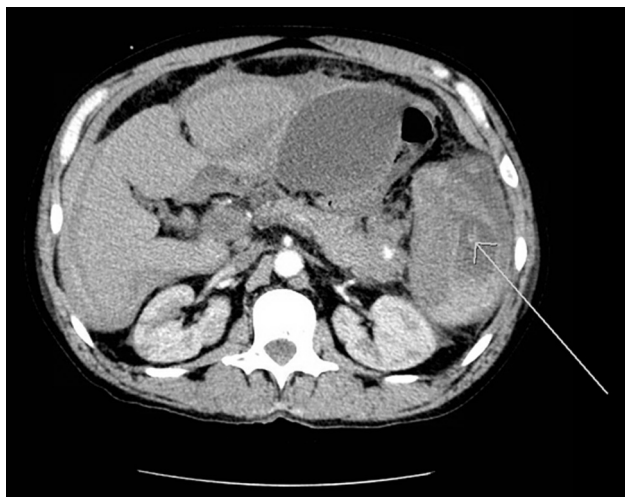


**Fig. 1 – Ultrasound of the splenic vein demonstrates acute nonocclusive thrombus (arrow).**

hematocrit returned to near baseline of  $10.5 \text{ g dL}^{-1}/35.0$  and blood pressure to 110/70 mm Hg. The patient maintained stable hemodynamics 1 week after embolization at which time a splenectomy was performed. The patient tolerated the splenectomy well and was subsequently discharged on postoperative day 14.

## Discussion

Atraumatic splenic rupture is a rare phenomenon, with estimates of its incidence between 0.1% and 0.5% [1]. In the medical literature, atraumatic splenic rupture can refer to 2 possible cases, the first being a spontaneous rupture of a



**Fig. 2 – Contrast-enhanced computed tomography abdomen demonstrates a small area of contrast extravasation (arrow) in an enlarged, heterogeneous spleen with multiple areas of parenchymal devascularization. Hemoperitoneum was also evident.**



**Fig. 3 – Contrast-enhanced axial computed tomography abdomen pelvis shows thrombus formation at the portal confluence with extension into the splenic vein (arrow).**

normal spleen, more appropriately termed as a spontaneous rupture, and the second being a spontaneous rupture of a diseased spleen, termed a pathologic rupture [2]. A true



**Fig. 4 – Coronal maximum intensity projection shows pseudoaneurysm at the distal splenic artery (arrow).**

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