

## CLINICAL IMAGE

### Giant splenic artery aneurysm rupture

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An 85-year-old white female with a history of heart failure was admitted to the emergency room with a complaint of sudden and severe left flank pain that radiated to the back. A thoracoabdominal CT scan revealed a giant ruptured splenic artery aneurysm (SAA) with active bleeding and hematoma spreading widely through the parasplenic spaces into the left peritoneum (Figs. 1 and 2). Additional findings included a horseshoe-shaped kidney. Hemodynamic instability appeared suddenly after the exam. The intubated patient was taken to the operating room with a severe hypotension (40/20 mmHg). Based on the life-threatening condition, a compliant aortic occlusion balloon catheter (Reliant; Medtronic, World Medical Manufacturing Corp: Santa Rosa, CA, USA,) was inserted percutaneously from the femoral artery and inflated in the suprarenal aorta, supported by an introducer sheath (12F, 45 cm; Flexor, Cook, IN, USA) (Fig. 3). After instant increase in the blood pressure, the patient underwent successful emergency surgical obliteration of the aneurysm with a suture ligation of the splenic artery orifice and splenectomy, because of the dimension of the lesion and the large peritoneal hematoma. A final angiogram showed the complete exclusion of the SAA with no signs of bleeding (Fig. 4).

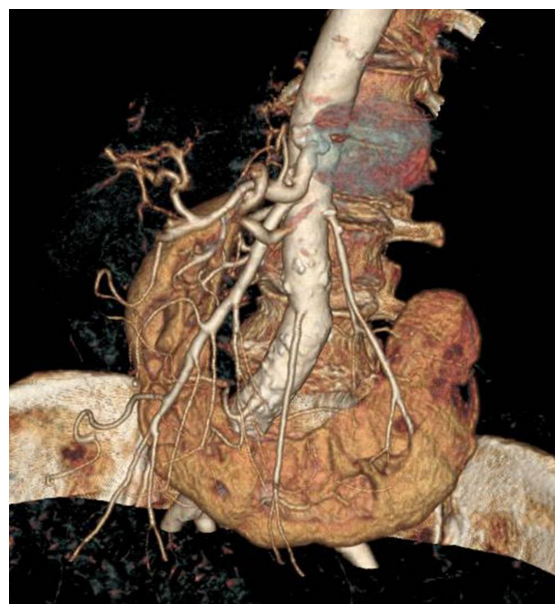
#### Key Clinical Message

Little exists on treatment for SAAs rupture which may require a fast bleeding control because of the hemodynamic instability and a large perisplenic/peritoneal hematoma. This case shows the use of endovascular clamping and mid-line laparotomy to perform the splenectomy because of the severe hypotension and the dimension of the lesion.

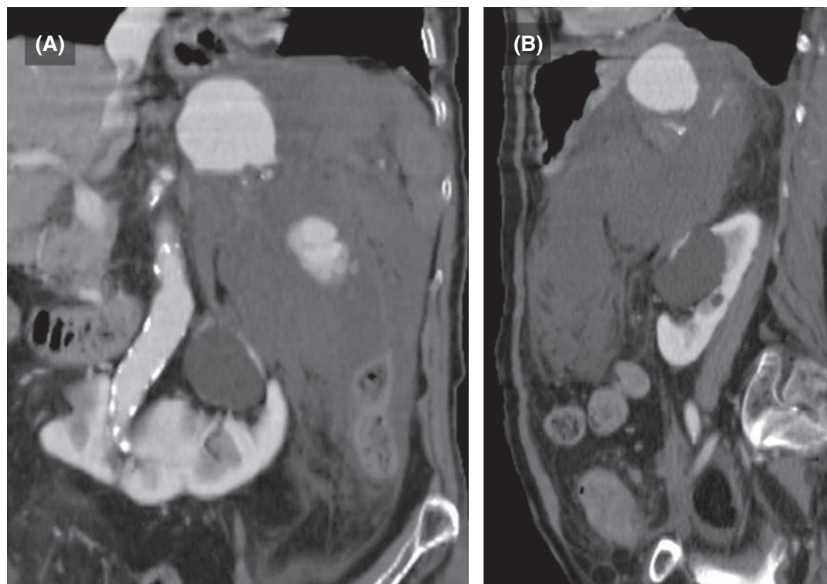
#### Keywords

Endovascular repair, splenectomy, splenic artery, visceral aneurysm.

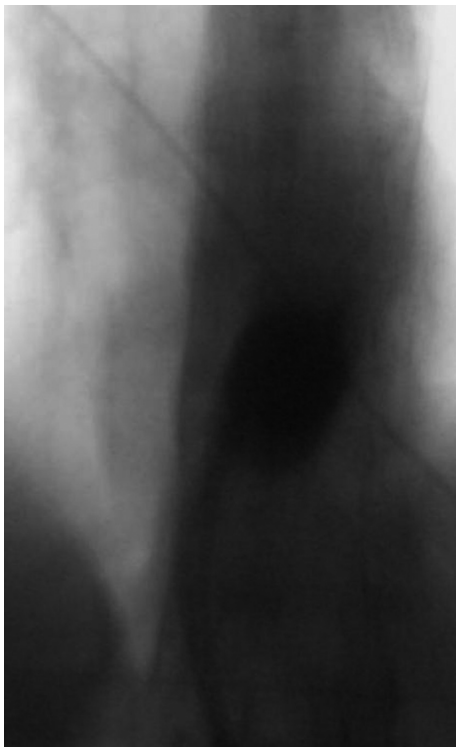
The SAAs, which constitute 60% of all splanchnic aneurysms, are mostly asymptomatic. The incidence is



**Figure 1.** Giant rupture of splenic artery aneurysm (SAA) with patency of the proximal segment of vessel.

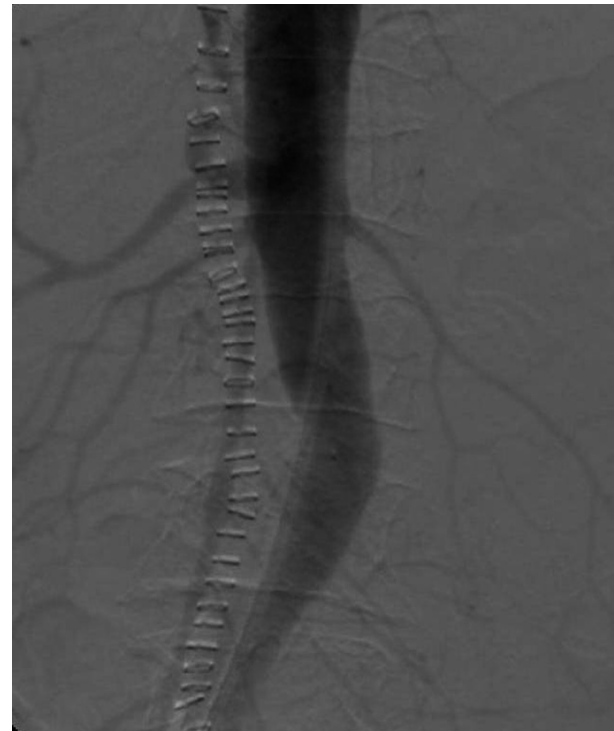


**Figure 2.** (A) coronal plane. (B) sagittal plane – maximum intensity projection (MIP).



**Figure 3.** Emergency percutaneous supraceliac endovascular clamping with a compliant aortic occlusion balloon catheter.

higher in females. The precise etiology of SAAs remains unknown. Aside from pregnancy, SAAs also have a strong association with portal hypertension, connective tissue disorders, atherosclerosis, pancreatitis, trauma, and liver



**Figure 4.** A final angiogram showed the complete exclusion of the SAA with no signs of bleeding.

transplantation [1]. The risk of rupture, which occurs in 10% of the cases, is higher in pseudoaneurysms as compared to true aneurysms. The life time risk of rupture is 2–10% for small and 28% for giant aneurysms [2]. Thus, once the diagnosis is made, immediate definite

intervention is mandatory for symptomatic and bigger, >2 cm, aneurysms. The treatment choice is governed by the clinical conditions, the aneurysm morphology, and the availability of the resources. Endovascular techniques are a good alternative to surgical approach with 80–92% success rate, especially for poor surgical candidates [3]. However, due to the potential severe tortuosity of the vessel, delivery of devices to a mid-splenic or distal-splenic artery may be technically unattainable. The surgical treatment with aneurysm exclusion, artery reconstruction, and spleen preservation is the best goal for repair of extra-parenchymal SAAs which has well-documented efficiency and durability [4]. However, in the case of rupture, this may be idealistic because exposure of the splenic artery can be difficult in the presence of a large perisplenic and peritoneal hematoma, often associated with severe hypotension. A surgical or endovascular supraceliac aortic control with a splenectomy should be considered to control the hemorrhage and prevent death in those cases.

## Conflict of Interest

None declared.

## References

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