

Giant Aneurysm of the Splenic Artery Adherent to the Pancreas with Splenic Infarct : Report of a Case

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Abstract. Giant aneurysms of the splenic artery are extremely rare clinical entities. The size of splenic aneurysms rarely exceeds 3 cm. The treatment includes surgical procedures that sometimes require pancreatectomy. We present a case of a 9 cm giant splenic artery aneurysm tightly adherent to the pancreas which was treated surgically.

Introduction

Splenic artery aneurysms (SAA) are the most frequent of the aneurysms of visceral arteries, with an incidence of approximately 1.6% observed in autopsy studies (1). Giant aneurysms of the splenic artery are extremely rare, only nine cases of SAA greater than 11 cm have been reported in English literature (2). Aetiology remains uncertain. Rupture and fatal haemorrhage are the most feared complications of SAA. We report a case of giant SAA with splenic infarction treated by surgery.

Case report

A 65-year old hypertensive woman presented to our unit with severe left upper quadrant pain radiating to the back since 3 months. Her past history was unremarkable. She had no history of pancreatitis, trauma, or portal hypertension. No abdominal mass was palpated on physical examination but a mild tenderness to deep palpation was noted in the left hypochondrium.

The blood analysis and other biochemical parameters were normal except for moderate anaemia, with a haemoglobin of 11.5 g/dl. At ultrasound examination a 9 cm SAA was detected. CT scan of the abdomen confirmed the presence of a large aneurysm of the splenic artery containing mural thrombus. There was also evidence of a splenic infarction. The mass was adherent to the pancreas (Fig. 1). Doppler ultrasound findings showed pulsatile flow inside the aneurysm. Upper gastrointestinal endoscopy was unremarkable.

The laparotomy revealed a large (9-cm) saccular aneurysm of the proximal splenic artery (Fig. 2) deeply embedded within the pancreatic parenchyma. Distal pancreatectomy including the aneurysm and splenecto-



Fig. 1

CT scan of the abdomen showing a giant aneurysm of the splenic artery (arrow) with splenic infarction (arrow head).



Fig. 2

Laparotomy revealed giant aneurysm (9 cm) of the splenic artery.

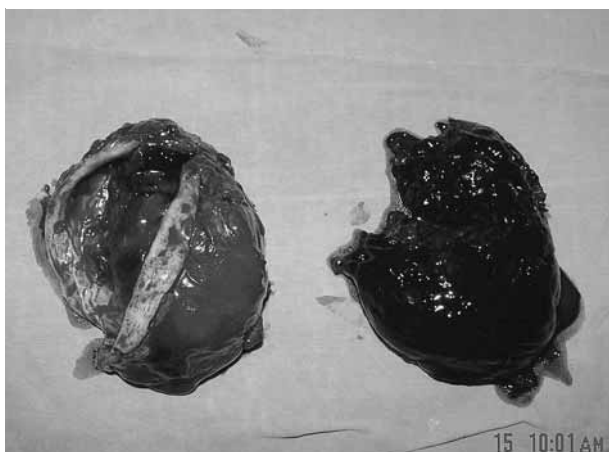


Fig. 3

Section of operative specimen showing large thrombus.

my were performed. Diffuse haemorrhagic necrosis was found in the dissected spleen (Fig. 3).

The pathological examination of the aneurysm was consistent with an atherosclerotic aetiology.

The patient had an uneventful postoperative course and was discharged on postoperative day 14th.

Discussion

Splenic artery aneurysm is a rare but sometimes a life-threatening vascular disease because of its potentiality for rupture or erosion into adjacent viscera (3).

The pathogenesis of SAA is not fully understood, but multiple pregnancies, pancreatitis, trauma, atherosclerosis, connective tissue disorders and portal hypertension are the most common associated conditions with splenic artery aneurysms (2).

In most cases the aneurysms are asymptomatic when diagnosed, and are often discovered incidentally. Nevertheless, large aneurysms may produce chronic abdominal pain (4). Most often, they are observed in the third and sixth decade of life, and they are three times more common in women (2,5). Various diagnostic means including, Doppler ultrasound, CT scan, angiography, magnetic resonance angiography, and CT angiography have been used for diagnosis of aneurysms of the splenic artery. Selective arteriography remains the gold standard for the diagnosis. A significant number of SAA are not discovered until the patient presents with symptoms of rupture.

SAA are predominantly singular, saccular and located in the distal one-third of the artery. Splenic aneurysms smaller than 2.5 cm rarely rupture. This is in contrast to a rupture risk of 28% for giant aneurysms (6). The overall mortality rate of ruptured SAA is 25% (3). The risk of rupture is determined by presence of symp-

toms, pregnancy, size of the aneurysm, portal hypertension and advanced age (7). Pregnancy is associated with 20 to 50 % of all ruptures, occurring most often in the third trimester. In contrast, the mortality rate of rupture in non-pregnant patients is much lower. In pregnancy, increased blood volume and cardiac output may contribute to increasing splenic artery flow and may cause spontaneous rupture with fetal and maternal death (1,8). Therapeutic decisions should be guided by the symptomatic nature of the aneurysm and the clinical status of the patient. Patients presenting with rupture of SAA require emergency surgery with splenectomy. Symptomatic, and large or enlarging aneurysms should be treated early. Any aneurysm on the hilar localization requires splenectomy. If the aneurysm was located in the proximal or middle third of the splenic artery, aneurysmectomy with end to end anastomosis of splenic artery and splenic preservation are recommended. In our case, splenectomy was performed due to splenic infarction. To avoid postsplenectomy sepsis, greater blood loss, and length of operation time, splenectomy is not favoured. Endoscopic ligation of the splenic artery which has a low mortality rate is preferred in young pregnant women, patients with high risk for surgery, and to decrease the hospitalization time. But, it is not recommended for patients who show the signs of rupture. (9). For the aneurysms exceeding 3 cm there is a general agreement that elective surgical treatment, transcatheter embolization, or a combination of both techniques are indicated (10). However, embolization also has many complications, including pain, fever and splenic infarction. Excision of the aneurysm is recommended when the lesion is separable from the pancreas, otherwise distal pancreatectomy including aneurysm is almost always necessary because of involvement of the tail of the pancreas (11). KITAMURA *et al.* reported a case of successful aneurysm excision without pancreatectomy, despite the fact that the aneurysm (23 mm) was tightly adherent to the pancreas (12). For aneurysms located in the distal third, resection with splenectomy is most often performed.

In conclusion, large SAA s are rare lesions that have potential risk of rupture and haemorrhage. Intervention is indicated for symptomatic and large or enlarging aneurysms.

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