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Case report

Giant Splenic Artery Pseudoaneurysm Mimicking Pancreatic Mass

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Abstract

Splenic artery aneurysm (SAA) is a rare condition in abdominal surgery and the third most abdominal aneurysm after aortic and iliac artery aneurysms. Open surgery during the giant SAA is still the gold standard of treatment.

Here we present the case of the giant SAA in a 68-year-old man. He had a pancreatic mass and iron deficiency anemia. The diagnosis was confirmed by ultrasound and CT angiography and showed a pancreatic mass and expansion of the splenic artery more than 3.5 cm.

The size of the aneurysm and the clinical picture of the patient were indications for open surgery. The patient was treated by resection of the spleen and distal pancreatectomy with the aneurysmal part of the splenic artery.

As far as we know, open surgery is still the best treatment choice, despite some advances in endovascular methods.

Keywords: ***splenic artery aneurysm, splenectomy, distal pancreatectomy.***

Introduction

Aneurysms of the splenic artery are rare intra-abdominal conditions that require intervention and constitute about 50-60% of all aneurysms of the fused arteries. This is a life-threatening condition due to spontaneous intraperitoneal rupture and hemorrhage, which occurs in 10% of cases with mortality of 10-25% in non-pregnant patients and up to 70% during pregnancy.

Patients with giant SAA (more than 2 cm) are symptomatic and can lead to complications in contrast to small SAA (less than 2 cm), which are usually asymptomatic and are diagnosed by chance during X-ray examinations.

Despite advances in medicine, endovascular treatment and laparoscopic surgery, open surgery is still the gold standard, especially in the case of the giant SAA.

Case Report

A 68-year-old Caucasian man entered the Department of General Surgery with the mild left upper quadrant pains and chronic anemia. He was treated for chronic bleeding stomach ulcers 20 years ago and underwent partial Bilrot II gastrectomy. Physical examination revealed a minimum sensitivity in the left upper quadrant and the scar in the upper part of the midline from the previous operation.

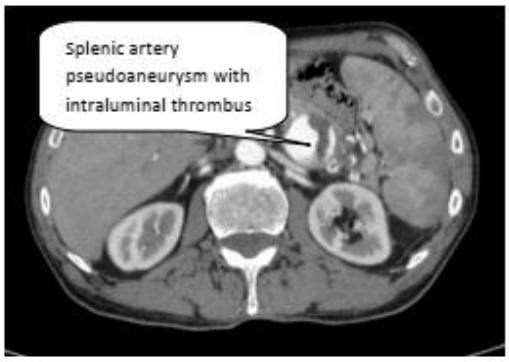
The body mass index was 30.2 kg/m2, and laboratory measurements showed iron deficiency anemia. HGB was 8.8 g / dL, Hct 18.7; MCV - 56; Ferritin - 4.8 ng / ml, serum iron - 2.9 g, TIBC 76 µmol / l, WBC - 10x10³ / µl, PLT - 360x10³ / µl.

An ultrasound revealed a hypoechoic mass of 43x34 mm in the tail of the pancreas. Intravenous contrast computed tomography showed 37x33 mm lesion and pseudo-aneurysmal dilatation of the splenic artery in the area of the pancreatic tail with an intraluminal thrombus (**Fig. 1,2**). According to CT angiography, the pseudoaneurysmal dilatation diameter was over 3.5 cm. After consultation with the interventional cardiovascular department, the indications for open surgical treatment were made in accordance with the clinical data and the size of the pseudoaneurysm.

Vaccination against influenza H. and pneumococcus and midline laparotomy (with removing scar from a previous operation) was done. The gastrocolic ligament was opened; the aneurysm was detected, it was located on the tail of the pancreas with dense adhesions of the pancreas and peripancreatic tissues. The pancreatic tail part of the the plenic artery was thrombosed. Multiple infarction sites are found in the spleen. After adheolysis, the distal part of the pancreas is mobilized from surrounding tissues (**Fig. 3**). The splenic artery and vein were ligated separately near

the truncus celiacus region. Consequently, en-bloc resection (splenectomy and distal pancreatectomy with pseudo aneurysmatic part of splenic artery) were performed (**Fig. 4**).

The postoperative period was uneventful and showed no pathologies during the control computed tomography after 3 months (**Fig. 5**).



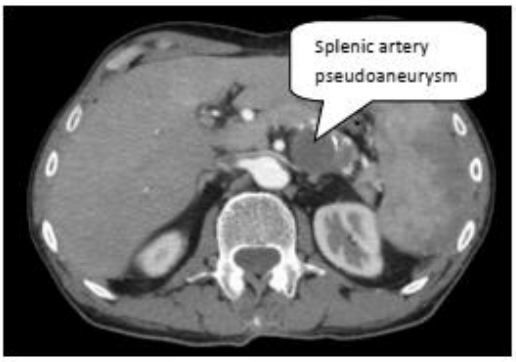


Figure 1,2: Preoperative Contrast-Enhanced Computer Tomography

Figure 3: Mobilised Pancreas (distal part)

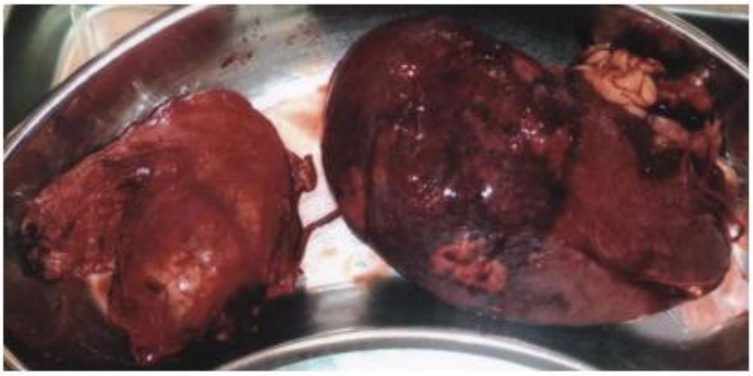


Figure 4: Specimen (en bloc resection - splenectomy, distal part of pancreas with aneurysmatic part of splenic artery

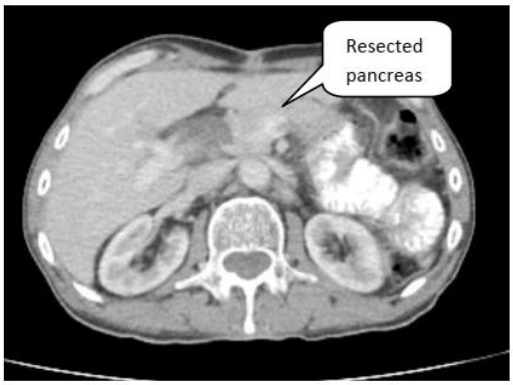


Figure 5: Postoperative view (CT scan was done on postoperative 1 month)

Discussion

The aneurysm of the splenic artery was first described by Beaussier in 1770 [1]. The overall frequency of SAA is about 0.1-0.2% and is in third place in terms of the frequency of intra-abdominal aneurysms after aortic and iliac aneurysms [2].

CAA is more common in women and the ratio of men and women is 4:1.

The etiology and pathogenesis is still unclear. Some authors have identified risk factors for SAA, such as hypertension, portal hypertension, female gender, pregnancy, liver cirrhosis, and orthotopic liver transplantation [3,4].

The diagnostic tool for pseudoaneurysms includes Ultrasound, Doppler US, CT and MRI. Doppler US is the first choice for pregnant women. In our case, we used transabdominal ultrasound investigation, which gave us a suspicion for SAA. To distinguish the diagnosis, we used contrast-enhanced computed tomography, and the diagnosis was confirmed.

Currently there is no consensus on the management of patients with SAA. Some authors have reported good results for minimally invasive treatments, such as coil embolization or stenting [5,6]. In our case, we decided to conduct an open operation due to the high risk of aneurysm rupture with a diameter of more than 2 cm in accordance with the literature. Hogendoorn et al.[4] showed that, there were no significant differences between open surgery and endovascular recovery in terms of the frequency of serious complications. Moreover, in this article, the short-term results of endovascular surgery were better than in open surgery, but open surgery was better in the long term.

According to Martinelli et al.[7], the overall success of endovascular treatment is 44.8%, technical success is 98.3%. Endovascular treatment was used in 3.6% of urgent cases. The incidence of complications was 8.9%. Open surgery was performed in 55.2% of cases and in 29% of emergency cases. General complications were 5.8%.

Also a systematic review and meta-analysis by Barrionuevo et al.[8], showed the results of 80 observational studies with a total of 2845 cases. According to this article, statistically significant differences in mortality between endovascular treatment and open surgery were not found. Endovascular treatment was associated with shorter hospital stay, lower cardiovascular complications, but higher rates of reinterventions was reported.

In cases of giant SAA, open surgery is indicated according to the results of the frequency of long-term complications, especially in patients with portal hypertension, pregnant patients and candidates for liver transplantation [9].

Conclusion

Thus, in our opinion, open surgery in the case of a giant SAA is still the gold standard of treatment.

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Conflict of interest

No conflict of interest.

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