

Multiple splenic artery aneurysms causing sinistral portal hypertension

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Introduction

Sinistral (left sided) portal hypertension is defined as a syndrome develops from splenic vein thrombosis due to primary pancreatic pathology. Splenic artery aneurysm (SAA) causing this type of portal hypertension is very rare and is due to aneurysm compressing the splenic vein. We present a case of a 58-year-old female with multiple giant splenic artery aneurysms causing left sided portal hypertension. She was successfully treated with aneurysmectomy with splenectomy.

Case presentation

A 58-year-old female presented with the history of on and off upper abdominal pain of 3 months duration. This pain was not related to the meal. She didn't have any history of hematemesis or melena. On examination, she had moderate splenomegaly and no evidence of ascites or stigmata of chronic liver cell disease. Complete blood count revealed her platelet count was 60 000/dl and Haemoglobin was 8g/dl. Her liver function test was normal. Ultrasound scan showed normal liver echotexture with cavernous transformation in the portal vein with moderate splenomegaly. Contrast-enhanced CT abdomen revealed multiple splenic artery aneurysm involving the mid and distal part of the splenic artery ranging from 3- 7cm with splenic vein thrombosis and moderate splenomegaly. (Figure 1) Her screening test for hepatitis B and C was negative and serum ferritin was within the normal range. Grade I oesophageal varices with evidence of portal gastropathy was found in the upper gastrointestinal endoscopy.

As she was symptomatic and her aneurysms were >2cm, we decided to offer her surgery. Routine vaccination was given 2 weeks prior to the surgery and haematology opinion was sought out regarding the timing of platelet transfusion. We performed laparotomy with left sided L shape incision and

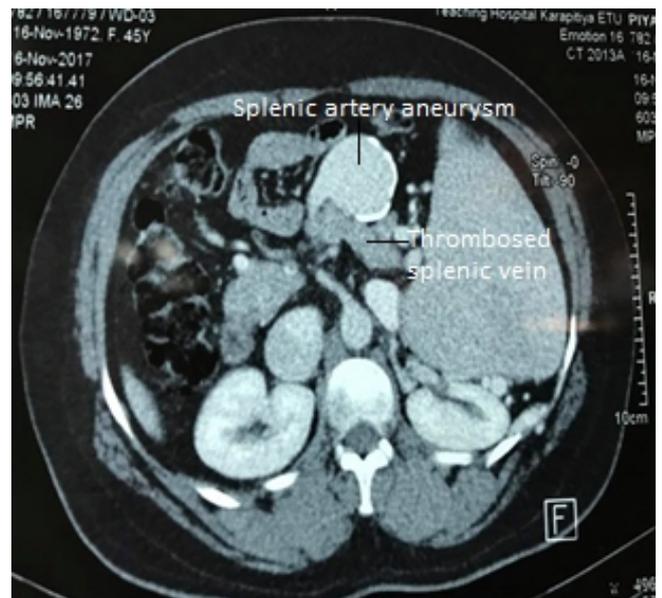


Figure 1. CT angiogram

accessed into the lesser sac. There were multiple SAA found in the mid and distal part of the splenic artery. (Figure 2) In the lesser sac, we ligated the splenic artery proximal to the aneurysms and transfused with 5 units of platelets followed by aneurysmectomy and splenectomy. (Figure 3) The patient had an uneventful recovery and was discharged on day 05.

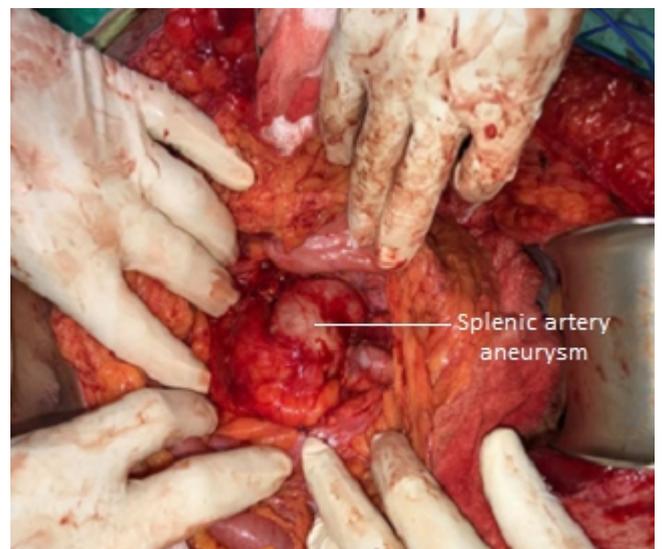


Figure 1. Intraoperative picture

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Figure 3. Multiple aneurysms

Discussion

Even though the splenic artery aneurysms (SAA) are the most common cause for visceral artery aneurysms the incidence of SAA is rare. The reported annual incidence ranges from 0.01 – 0.2%. It is the third common intra-abdominal aneurysm after aorta and iliac arteries and it affects females commonly. Usually, at presentation SAA measures about 2.1cm and rarely presents with the diameter above 3.1cm. Giant aneurysms are generally defined as the diameter >5cm [1].

About 80% of the SAA presents asymptotically so detected incidentally in imaging. But some patients might present with upper abdominal pain as in our patient. Sometimes it can present as rupture or erosion into adjacent structures [2]. But SAA causing sinistral portal hypertension is rare. This is due to the aneurysmal mass effect compressing the splenic vein causing stasis and thrombosis. There are only a few case reports reported in the literature. There are case reports of extrahepatic portal hypertension caused by single SAA [3], but multiple giant SAA causing this extrahepatic portal hypertension is very rare. Our case is unique because she had portal hypertension, besides it was caused by multiple giant SAA. We arrived at a diagnosis of extrahepatic portal hypertension because in liver imaging the echotexture of the liver was normal, liver function tests were within normal range and more than this there was evidence for splenic vein thrombosis in the CT images.

The main concern for the surgeons is when to treat the SAA. Rapidly enlarging, symptomatic or ruptured aneurysms require intervention without any doubts. There is no clear guideline for the size for asymptomatic SAA, but the common consensus is >2cm [4]. The lack of consensus in the

management of asymptomatic small <2cm aneurysms might be due to the lack of case series due to rarity of this aneurysm. Lakin RO et al in their series recommends serial imaging or even discharge of asymptomatic < 2cm SAA because of negligible risk of rupture [4].

One form of intervention was required for our patient because of the size and symptoms. The options available were either endovascular or open surgery. Endovascular options are transcatheter coil embolization, thrombin injection or covered endovascular stents. Injection methods can be used for narrow neck saccular aneurysms or the distal aneurysms. Stents are useful in the proximal aneurysms with spared distal artery. Even though the mortality rate is less compared to open surgery, the success rate is around 85% [5]. Our case is not suitable for either because it is giant involving proximal and distal part and caused mass effect.

Open surgical procedures may be aneurysm resection and reconstruction or aneurysmectomy combined with splenectomy. We had to do splenectomy because of the same reasons, aneurysms were involved in both proximal and distal arteries.

Conclusion

Even though SAA are the common visceral artery aneurysms, the incidence is rare. Left sided portal hypertension is usually caused by pancreatic pathology, but SAA also can cause it. Timely and planned surgical intervention for SAA with portal hypertension will prevent devastating complications such as rupture and erosion into adjacent structures.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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Learning Points:

- Splenic artery aneurysm is the third common intra-abdominal aneurysm
 - It is the commonest visceral artery aneurysm
 - It can be the cause for left sided portal hypertension
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