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RESEARCH ARTICLE

Giant pseudoaneurysm of splenic artery

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ABSTRACT

Giant Pseudoaneurysms of visceral arteries are rare but carry a significant risk of morbidity and mortality if left untreated. We are reporting a case of giant pseudoaneurysm of splenic artery secondary to pancreatitis in a middle aged female patient which was treated successfully by surgical excision with low postoperative morbidity.

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INTRODUCTION

Visceral artery aneurysms are uncommon and pseudoaneurysms are even rarer entities. The splenic artery aneurysm is the most common among the visceral artery aneurysms. Goldberg et al found only 160 cases of splenic artery pseudoaneurysm in the literature which were reported in last 43 years¹. The Mayo clinic team have reported only 10 cases of splenic artery pseudoaneurysm in their literature review of 18 years². Giant pseudoaneurysms, defined as pseudoaneurysm measuring equal to or greater than 5cms in size, are rare¹. Only 19 cases have been reported till now³. We are reporting a case of Giant pseudoaneurysm of splenic artery.

Case Report

A 35 year old female presented with the complaints of persistent pain over left upper abdomen since 2 years. On examination patient had jaundice and massive splenomegaly. Blood counts were in the lower limit of normal range. LFT showed mild hyper bilirubinemia and prothrombin time of 32 seconds. Ultrasound abdomen report was Chronic liver disease with chronic pancreatitis with moderate splenomegaly and pseudoaneurysm of splenic artery with portal vein thrombosis with portal cavernoma (Fig 1). Doppler study of splenic artery showed large pseudoaneurysm measuring 5.1*4.2cms with portal vein thrombosis with cavernoma formation (Fig 2). Surgery was planned as 1) the patient had persistent symptoms 2) the significant risk of rupture of pseudoaneurysm, 3) the blood counts were in the lower limits of normal range probably patient was going in for hypersplenism. With adequate pre operative preparation patient underwent laparotomy through left subcostal incision, with excision of splenic artery proximal to the giant pseudoaneurysm, and splenectomy. Intra

operatively patient had primary aemorrhagic shock secondary to diffuse bleeding from the collaterals, the sub diaphragmatic area and from the raw areas of splenic attachments which could not be suture ligated. Operative field was packed tightly with abdominal packs and abdomen was closed. During peri and immediate post operative period patient was transfused with blood, fresh frozen plasma and platelets. Patient was stabilised hemodynamically and relaparotomy was carried after 48 hours with removal of packs and placement of drain. Post operatively patient had sub diaphragmatic collection which was drained.

DISCUSSION

Visceral artery Pseudoaneurysm is rare. Among the visceral arteries the splenic artery is most commonly affected. Splenic artery aneurysms and pseudoaneurysm account for 60% of all the visceral artery aneurysms⁴. The other arteries that are involved are pancreaticoduodenal, gastroduodenal, hepatic artery and celiac artery. Pseudoaneurysms are most commonly caused by pancreatitis and blunt trauma. Both acute and chronic forms of pancreatitis are known to cause the pseudoaneurysm². The occurrence of pseudoaneurysm due to pancreatitis varies from 4% to 17%⁵. The mechanism that has been attributed is by the digestion of splenic artery by pancreatic enzymes. The arterial wall subsequently weakens, forming a pseudoaneurysm². Posttraumatic pseudoaneurysm occurs mainly by rapid deceleration resulting in the damage to the intima and elastic lamina thus predisposing to the weakness of the vessel wall and hence the pseudoaneurysm². Presentation of splenic artery pseudoaneurysm varies from an incidental finding to acute haemorrhagic collapse. Haemorrhage can lead to massive bleeding in to the peritoneum, retroperitoneum, adjacent organs or pancreatic duct². The reported rate of haemorrhage from splenic artery pseudoaneurysm is as high as 47%, of which 58% are hemodynamically unstable⁴. Patient

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can also present with chronic abdominal pain of varied severity. The diagnosis is best established by ultrasound or CT. Ultrasound has the benefit of greater availability, lower cost, real time capability and no need of contrast material. The disadvantage being operator dependent and small pseudoaneurysm may be missed. In addition Doppler scanning enables the conformation of the neck of pseudoaneurysm and also the flow patterns. CT has the advantage of picking up the smaller pseudoaneurysm however does not offer the benefit of therapeutic manoeuvres. Angiography is both diagnostic and therapeutic².

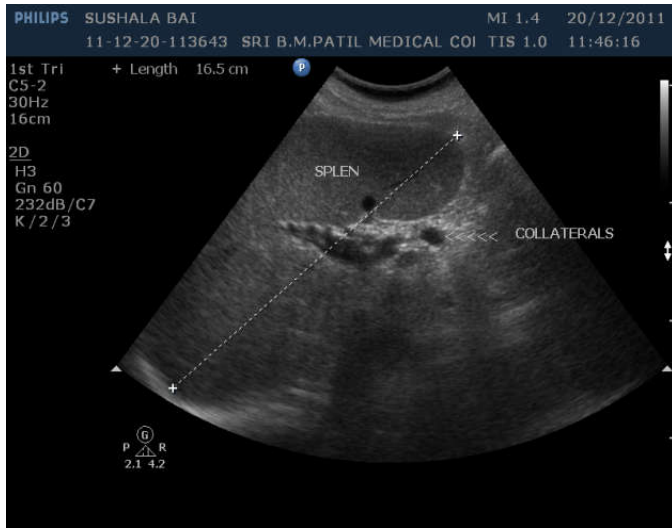


Fig 1. splenomegaly with collaterals

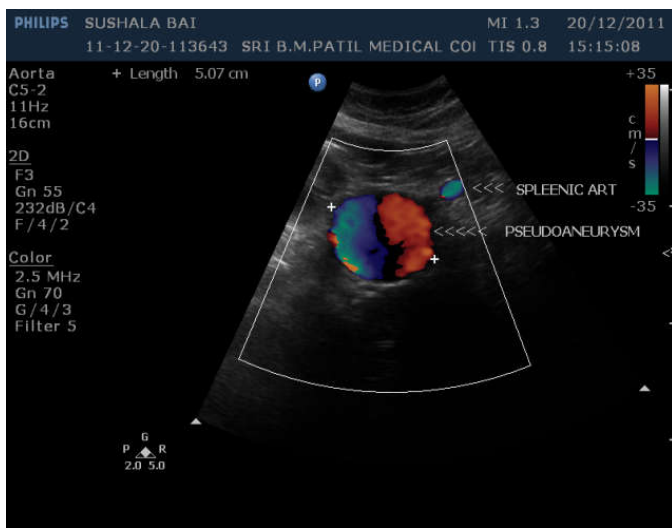


Fig 2. Giantsplenic artery pseudo aneurysm

The guidelines recommended for treatment are 1) symptomatic or greater than 2 cm in diameter splenic artery aneurysms 2) splenic artery pseudo-aneurysms 3) lesions found in pregnant women or women of childbearing age 4) liver transplantation candidates⁶. The surgical treatment is aneurysmectomy with or without splenectomy depending upon the location of the aneurysm relative to the splenic hilum. The morbidity and mortality of surgical aneurysmectomy are reported to be roughly 10% and 1% to 2% respectively. Ligation of the pseudoaneurysm and repair of the splenic artery has been reported, but is associated with 43% failure rate⁴. Percutaneous methods have been used to treat splenic artery and other

pseudoaneurysm of the visceral artery. Percutaneous transarterial embolisation of the splenic pseudoaneurysm using coils, detachable balloons, covered stents, gelfoam, and N butylcyanoacrylate has been described. The disadvantages are end organ infarction, multiple settings, and higher failure rates⁴.

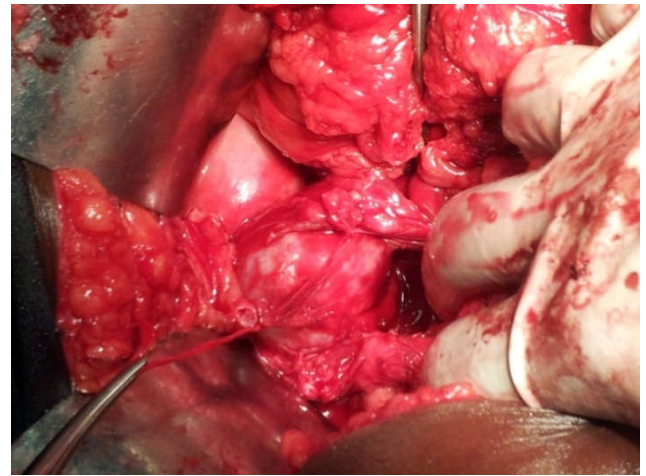


Fig 3. Pseudoaneurysm of splenic artery

HPR reported as congestive spleen with pseudoaneurysm of splenic artery. Follow up of the patient for 6 months postoperatively was uneventful.

Conclusion

Giant pseudoaneurysms are rare. They carry significant morbidity if left untreated. We are reporting a case of giant pseudoaneurysm of splenic artery which was treated successfully by surgical excision with low morbidity.

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