

## Case Report

# Splenic artery aneurysm: a case report with review of literature

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## ABSTRACT

Splenic Artery Aneurysm (SAA) is very rare in occurrence and they occur in approximately 1% of the population and are usually an incidental finding, but the necropsy studies have given rates as high as 10%. For its rarity in occurrence here we present a case of splenic artery aneurysm in a 40 year old alcoholic presenting with upper and lower gastrointestinal bleeding. He was diagnosed as splenic artery aneurysm on CT scan and confirmed by laparotomy and pathological examination.

**Keywords:** Spleen, Artery, Aneurysm, Incidental

## INTRODUCTION

Splenic artery aneurysm is the third most common location of intra-abdominal aneurysms following the abdominal aorta and iliac arteries.<sup>1</sup> They occur in approximately 1% of the population and are usually an incidental findings<sup>2</sup> but necropsy studies have given rates as high as 10%.<sup>3</sup> Clinical presentation of a splenic artery aneurysm is variable with most patients being asymptomatic. Rupture may take place into the colon, stomach, and intestine. Rupture of splenic artery aneurysm into the gastrointestinal tract is an uncommon cause of hematemesis and melena. Patients present with symptoms of severe recurrent upper gastrointestinal bleeding and sharp epigastric pain and lower gastrointestinal bleeding.

## CASE REPORT

A 40 year old chronic alcoholic presented with recurrent attacks of upper and lower GI bleeding of one month duration. Upper GI endoscopy revealed bleeding through ampulla of Vater. Contrast Enhanced Computerized

Tomography of abdomen showed a 4x3 cm pseudoaneurysm, proximal to splenic hilum communicating with major pancreatic duct. Laparotomy not only confirmed the aneurysm but also revealed multiple blood stained pancreatic duct calculi. The aneurysm was ligated proximally, followed by splenectomy and longitudinal pancreaticojejunostomy (Puestow procedure).

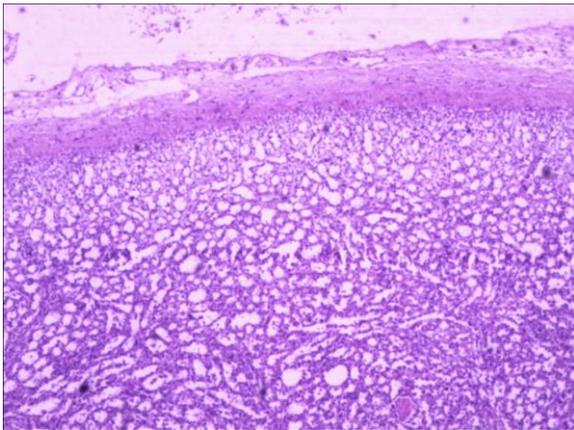
Gross specimen of splenectomy was measuring 12x9x5 cm and a separate haemorrhagic mass was measuring 5x4x3 cm. Cut section of both the masses was grey brown with congested areas.

Microscopic examination of the specimens showed structure of spleen with thickened capsule, dilated sinusoids, hyalinised thickened blood vessels and showed dilated and thinned out arterial wall filled with thrombus. There were focal areas of ischemic necrosis and hemorrhage.

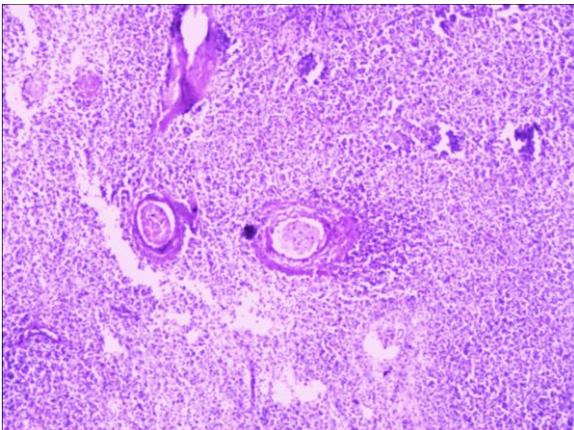
We could follow up the case continuously for six months but, after that patient did not turn up.



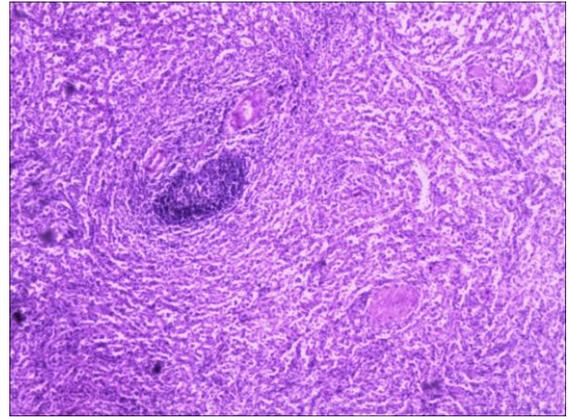
**Figure 1:** Intraoperative photo showing aneurysm and arrow showing multiple blood stained pancreatic duct calculus.



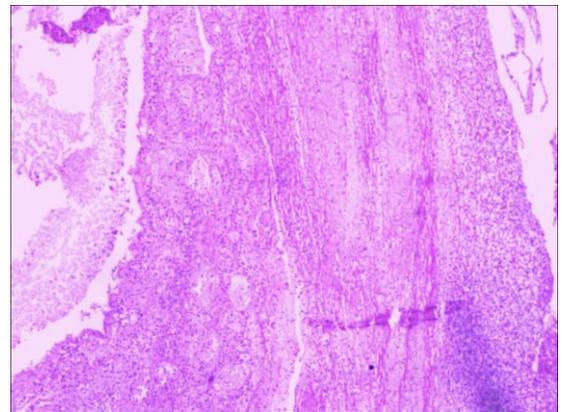
**Figure 2:** Photomicrograph showing splenic capsule with dilated sinusoids (H&E 100x).



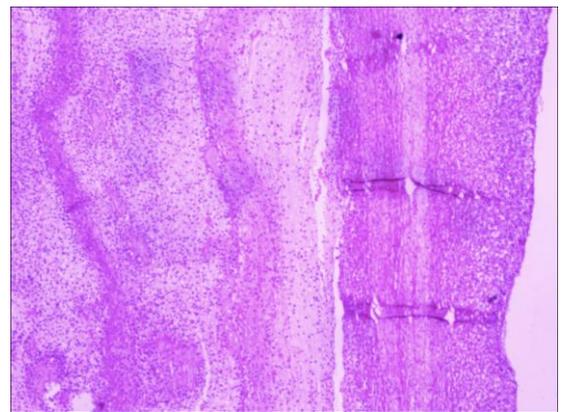
**Figure 3:** Photomicrograph showing spleen with thickened blood vessels (H&E 100x).



**Figure 4:** Photomicrograph showing structure of spleen with white pulp and dilated sinusoids (H&E 100x).



**Figure 5:** Photomicrograph showing intra-arterial thrombus with lines of Zahn (H&E 100x).



**Figure 6:** Photomicrograph showing intra-arterial thrombus showing lines of Zahn (H&E 100x).

## DISCUSSION

Specific causes of splenic artery aneurysms remains unknown, although suspected etiological factors are thought to be atherosclerosis, focal arterial inflammation, pancreatitis, hypersplenism, portal hypertension, trauma, and hormonal and hemodynamic changes due to

pregnancy, liver transplant, and splenomegaly.<sup>4</sup> The incidence of SAA in females is four times the rate in males. This difference, thought to be due to the hormonal and hemodynamic changes associated with pregnancy, and is not seen with other visceral artery aneurysms.<sup>5</sup> SAA can be diagnosed at any age, but is more commonly seen in the fifth and sixth decades with a mean age of presentation of 52 years.<sup>6</sup> These are generally located in the middle and distal segment of the artery and are mostly of saccular form. Location and size of the splenic artery aneurysm determine the likelihood of rupture. The risk of SAA rupture ranges between 3% and 46% and depends on the diameter of the aneurysm. Exception to the rule is pregnant women where the risk of rupture in the reported cases amounts to 95% (with maternal mortality at 70% and fetal mortality reaching 75%).<sup>7</sup> Rupture may take place into the colon, stomach, and intestine.<sup>8</sup> Rupture into the pancreatic duct or pseudopancreatic cyst leads to haemosuccus pancreaticus. Patients present with classic symptoms of severe recurrent upper gastrointestinal bleeding and sharp epigastric pain.<sup>9</sup>

Correct diagnosis is difficult since often the disease is symptomless. Generally they are incidentally diagnosed on autopsies or abdominal radiographic examinations. Contrast-enhanced CT scans and CT angiogram are important in the evaluation of this condition. Doppler ultrasound represents a fast and noninvasive strategy and is considered modality very reliable in diagnosis and has great potential as follow-up tools. Endovascular procedure is considered as a first choice of treatment for splenic artery aneurysm. The favored method of treatment at present is embolization. Symptomatic aneurysms and those greater than 2 cm should be removed if the patient is a reasonable operative risk. Lesions proximal to the hilum of the spleen can be managed by resection and primary end-to-end anastomosis or proximal and distal ligation with resection of the involved segment. Distal lesions require splenectomy and resection of the aneurysm.

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