Case Report

Splenic Artery Aneurysm Rupture - A Rare Cause of Upper Gastrointestinal Hemorrhage

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Splenic Artery Aneurysm (SAA) rupture is rarely responsible for the upper gastrointestinal hemorrhage . A 53 years old male presented with recurrent hematemesis and melena . He had a leaking SAA into the gastric fundus. The case report and selective review of the literature regarding presentation, diagnosis and management of these is also part of presentation.
Key Words: Aneurysm, splenic Artery

Splenic artery rupture is a rare condition, it constitutes approximately 60% of all visceral arterial aneurysm[1]. Its incidence varies from 0.05% to 0.16% in different series[2]. M. Baussier reported the first case of splenic artery aneurysm in 1771 during an autopsy. Most cases of SAA are asymptomatic, detected incidentally while investigating for some other clinical problems. The main complication of SAA is rupture into the peritoneal cavity. However rupture of SAA with erosion into the stomach is a very rare cause of upper gastrointestinal hemorrhage, only few cases have been reported. This report describes our experience in the diagnosis and management of a ruptured SAA causing hematemesis via a fistulous communication between SAA & stomach.

Case Report:

A 53 years old man had history of intermittent jaundice for last one year and hematemesis with melena for about 4-5 months. Patient developed no clinical finding in this period and remained healthy otherwise. He had pallor when he presented. In his basic work up which included multiple endoscopies, he was found to have grade-I esophageal varices, treated with band ligation. The abdominal ultrasound revealed normal liver with normal portal vein and hepatic veins.

His biochemical profile revealed normal liver function tests and anti HCV found reactive. Patients had recurrent hematemesis and malena despite of the band ligation. Although unusual, diagnosis of a leaking SAA permeating into the stomach wall was made. The following Upper GI Endoscopy and Endoscopic Ultrasound showed heaped up mucosal folds with a central orifice adjacent to the suspected site of SAA possibly of a communication between aneurysm and gastric fundus. A faint blush was noted at the gastric fundus adjacent to the aneurysm . The patient was scheduled for an elective exploration. However the same evening he had a massive hematemesis and went into hypovolemic shock due to this hemorrhage.

His pulse was 135/min and blood pressure was 60mm Hg systolic. He responded to volumic resuscitation and emergency laparotomy was done. In peroperative findings there was a saccular splenic artery aneurysm of 5.0 x 4.0 x1.5cm away from splenic hilum. It was eroding the upper surface of pancreas and into the gastirc fundus making a fistula that was lead to hematemesis. Stomach was full of blood clots. The aneurysm along with spleen was resected and distal pancreatectomy performed. The stomach was repaired in double layer after freshening the margins and evacuation of clots.

His postoperative course in ICU was uneventful. Histological examination of the specimen confirmed the diagnosis of aneurysm of the splenic artery and transmural permeation into the gastric fundus.Patient developed left subhepatic collection in early postoperative period, aspirated under CT guidance. No other complication occurred. The patient is fine and on regular follow up.

Discussion:

The splenic artery is the third most common site of intra-abdominal aneurysm formation after the abdominal aorta and iliac arteries. They may be found in all age groups but the peak incidence in the fifth and sixth decades of life. They occur more frequently in women, especially during pregnancy due to sex-related factors, increase reproductive hormone levels and high splenic blood flow cause a deleterious effect on the elastic vascular tissue[3,4,5,6].

In majority of cases SAA is single and saccular in shape, and are located in the middle and distal parts of the splenic artery. The pathogenesis of SAA is not fully understood, but multiparity and portal hypertension seems to promote aneurysmal dilatation[7]. The strong association between SAA and multiple pregnancies is possibly due to hormonal and hemodynamic effects on the arterial wall during pregnancy.

SAAs are usually asymptomatic[7,8]. Acute left upper quadrant pain and shock usually indicate rupture of the aneurysm, which occurs in 5% -10% of the cases[9]. Correct diagnosis is difficult as often the disease is symptomless. The Duplex ultrasound scan, CT scan, MRI and angiography are useful diagnostic methods. Sometimes, the diagnosis is made on the basis of the bleeding from a ruptured SAA into the peritoneal cavity or gastrointestinal

tract. The risk of SAA rupture ranges between 3 % and 46 % depending on the diameter of the aneurysm.

SAAs larger than 2cm, particularly in women of childbearing age, are treated surgically because of the high mortality rate if rupture occurs during pregnancy[10]. Other surgical indications include a ruptured aneurysm into the peritoneal cavity or gastrointestinal tract. Surgical treatment includes ligation of the splenic artery and resection of the aneurysm. Once the rupture has occurred, aneurysm is resected along with the spleen, sometimes including distal pancreatectomy as well. Selective embolization of the splenic artery is an important alternative method of treatment in high-risk patients[11]. Splenic artery aneurysms rarely occur. They are often symptom less or present with atypical/ non-characteristic symptoms. Diagnosis is very difficult. Mortality connected with SAA rupture is high, especially during pregnancy. Thus, the diagnosis of the aneurysm of SAA rests upon a high index of suspicion. Only the combined, integrated efforts on intervention by radiologist and surgeon can ensure rapid stabilization of hemorrhage and the desired improvement in survival[12].

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