RUPTURED SPLENIC ARTERY ANEURYSM

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ABSTRACT

We present a case of ruptured splenic artery aneurysm in 18 years old unmarried girl who presented with severe upper abdominal pain and sudden collapse. Ultrasound abdomen showed free fluid and ultrasound guided needle aspiration confirmed haemoperitoneum. On laprotomy, a 3cm saccular aneurysm of the middle of the splenic artery was noted. With prompt and urgent management the patient survived.

Key Words: *Splenic artery, Aneurysm, Spontaneous Rupture, Haemoperitoneum.*

INTRODUCTION

Ruptured splenic artery aneurysm is a rare and catastrophic event.[1] There is a female predominance.[2-6] The pathogenesis of splenic artery aneurysm is not fully understood. The reported risk of rupture varies from 3% to 10%, with a significant mortality rate of 36%.[2,7,8] The risk of rupture is much higher during pregnancy and results in a maternal and fetal mortality rate of 70% and 95%, respectively.[2,4,6-11] Early diagnosis and treatment is the key to survival in case of rupture.[1] Treatment is recommended for all patients with symptomatic or growing aneurysms and for all pregnant women and women of childbearing age who may subsequently become pregnant. Elective therapy should also be considered for good surgical candidates with large aneurysms (> 2cm) since they carry a higher risk of rupture.[2-4,6,7,10,12,13]

CASE REPORT

An 18 years old unmarried girl presented to emergency room of Fauji Foundation Hospital Rawalpindi with history of severe upper abdominal pain for one week and sudden collapse for two hours. At presentation she was hypotensive, having blood pressure of 70/50mmHg and pulse of 125 pm, regular in rate and rhythm but very weak. Her conjunctivae were whitish pale and her body color was ashen grey. She was afebrile and drowsy. Two wide bore peripheral lines were immediately passed and haemaccl infusion was started. The blood pressure improved to 90mm Hg systolic after rapid infusion of about three liters of colloids and crystalloids. It sustained for some time. Clinically there was free fluid in the abdomen and it was moderately distended and tender. Urgent cross match and other base lines investigations were sent along with serum amylase and the urinary specimen (just a small amount obtained through urgent passage of Foley catheter) were sent for urinary beta human chorionic gonadotropin levels to look for ruptured ectopic pregnancy. Ultrasound abdomen showed free fluid and ultrasound guided needle aspiration confirmed haemoperitoneum. She did not give any history of missed menstrual period or trauma. The patient was shifted to operation theatre for urgent laparotomy. A non cross-matched O negative blood was rapidly transfused for the deteriorating blood pressure.

A midline incision was made and the peritoneal cavity was found full of blood clots which were evacuated. Abdominal and pelvic viscera were found normal. Abdominal aorta was clamped for five minutes with a vascular clamp at sub-hiatal level. Having no evidence of any intraperitoneal source, the lesser sac was dissected open and it was again found full of clots. All clots removed, a 3cm saccular aneurysm of the middle of the splenic artery was seen spurting fresh arterial blood when aortic clamp released. The dissection was extended more proximally and double ligation of the splenic artery was done followed by splenectomy. A drain was placed in the lesser sac area and mass closure of the abdomen was done with proline 1.

A total of six units of group matched including one empirical O-negative blood was transfused. The post operative course was complicated by some respiratory distress and somewhat prolonged serous drainage of the drain.

The respiratory distress settled on second post operative day with fluid restriction and the drain removed on 7th postoperative day. Postoperative abdominal ultrasound on 10th day was unremarkable. She was injected the vaccines against capsular organisms and thoroughly educated regarding post splenectomy sepsis. The patient was discharged home on 14th post operative day with the skin stitch out. The patient was regularly reviewed for six months post operatively with no problems encountered.

DISCUSSION

Primary splenic artery aneurysm is an uncommon vascular pathology, with incidence of 0.01% to 0.2% reported at autopsy series.[2,7,8] It accounts for up to 60% of all visceral artery aneurysms.[2,13] There is a female predominance, with the mean age of presentation at 52 years.[2-6] They are usually saccular, and the majority of them are located in the mid to distal splenic artery.[2,4-6] The pathogenesis of splenic artery aneurysm is not fully understood. However, there are close associations with medial fibrodysplasia, multiple pregnancies, portal hypertension, liver transplant, and splenomegaly. Atherosclerosis and inflammation are often seen histologically; although they are most commonly secondary events resulting from primary degeneration of the media.

Most patients are asymptomatic, with aneurysm found incidentally on imaging studies. It may remain silent until ruptured[1]. Up to 20% may present with epigastric or left upper quadrant abdominal pain.[2,9] Occasionally, the aneurysm can erode into an adjacent viscus or into the pancreatic duct and presents as gastrointestinal hemorrhage[8] Rupture of the aneurysm causes severe abdominal pain and hypovolemic shock. The initial rupture may be tamponaded within the lesser sac, with free intraperitoneal hemorrhage ensuing in minutes to hours. This double-rupture phenomenon allows valuable time for diagnosis and surgical intervention.

The reported risk of rupture varies from 3% to 10%, with a significant mortality rate of 36% after rupture. Haemodynamic compensation is often good in healthy individuals followed by rapid deterioration.[1] The risk of rupture is much higher during pregnancy and results in a maternal and fetal mortality rate of 70% and 95%, respectively.[2,4,7-11]

Emergency laparotomy is indicated and is the key to survival of these patients.[1] While elective treatment is recommended for all patients with symptomatic or growing aneurysms and for all pregnant women and women of childbearing age who may subsequently become pregnant. Elective therapy should also be considered for other wise healthy candidates with large aneurysms (> 2cm) since they carry a higher risk of rupture.[2-4,6,7,10,12,13] Surgical treatment options include aneurysm resection or simple ligation. Depending on the location of the aneurysm, splenectomy and distal pancreatectomy may be necessary. Percutaneous transcatheter embolization, with success rate of over 80%, offers an attractive alternative to surgery, especially for patients with high surgical risk.[4,14,15]

This case demonstrates a ruptured splenic artery aneurysm presenting with a life threatening internal haemorrhage which was successfully operated well in time and the patient survived.

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