

Case Report

Rupture of splenic artery aneurysm during pregnancy: A report of maternal and fetal survival

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ABSTRACT

We report a case of ruptured splenic artery aneurysm in pregnancy during an urgent caesarean section for suspected fetal distress. The outcome was good for both mother and baby. The condition should be considered in any pregnant woman who experience acute abdominal pain or collapse even when there is no revealed vaginal bleeding. (Rawal Med J 2011;36:71-72).

Keywords: Spleen, aneurysm, and pregnancy.

INTRODUCTION

Splenic artery aneurysm is the third most common intra-abdominal aneurysm, following abdominal aorta aneurysm and iliac artery aneurysm.¹ Rupture, although rare, is usually a catastrophic event associated with pregnancy and the puerperium. The mortality rate among pregnant women is very high at 75% with a fetus mortality rate even higher of 95%.² This report describes a successful outcome of pregnancy complicated by splenic artery aneurysm.

CASE PRESENTATION

A 29-year old woman, P4, 39 weeks pregnant with a history of one caesarean section was admitted to the labor ward at King Hussein Medical Centre (KHMC) with complaints of sudden sharp upper abdominal pain on the left side. She had similar milder pains for few days before admission. She denied any vaginal bleeding or any history of trauma to the abdomen. Examination revealed a heart rate 100 beats/min, blood pressure of 110/60 mmHg and a respiratory rate 30 breaths/min. Abdominal examination revealed generalized guarding with tenderness in the left upper abdomen. Vaginal examination showed a closed, long cervix.

Fig 1. Significant retroperitoneal and peri-splenic hematoma



Laboratory results were as follow: red blood cell count 3.20×10^6 /ul, hemoglobin 9.6 g/dl, white blood cell count 21.4×10^3 /ul and platelets 241×10^3 /ul. Serum urea, creatinine, and electrolytes were normal. Urinalysis showed no proteinuria or hematuria. Cardiocotography showed attacks of decelerations. She was provisionally diagnosed as having abruptio placenta or rupture uterus, in spite of absence of vaginal bleeding and was immediately taken to the operating theatre for emergency caesarean section. An estimated 1500 ml of blood and clots were noted in the abdominal cavity with intact previous uterine scar. A low-transverse uterine incision was made and a 2910 gm male baby was delivered.

Fig 2. Large aneurysm arising from the mid splenic artery.



The 1 and 5-min Apgar scores were 6 and 8, respectively. There was no evidence of abruptio placenta. A midline incision showed a laceration and a tear at the lesser omentum with clots around it, but no active bleeder. A large left retroperitoneal hematoma was noted as well without extending to the midline. Peritoneal washing was performed and a drain was inserted before closure. She received two units of blood intraoperatively. At day one post surgery, abdominal CT scan with contrast showed splenic artery aneurysms at two sites, and suspicious pseudo-aneurysm due to possible rupture of aneurysm with significant retroperitoneal and peri-splenic hematoma (Fig. 1).

Fig 3. Embolized splenic artery.



A splenic artery angiogram showed a large aneurysm arising from the mid splenic artery and another smaller aneurysm at the proximal splenic artery (Fig. 2). The splenic artery was embolized without any complications (Fig. 3). She tolerated the procedures well and was discharged home on day five post caesarean section.

DISCUSSION

Splenic artery aneurysm occurs most commonly in the distal portion of the splenic artery, and is multiple in 20% of cases and usually is secular in form.³ Maternal and fetal mortality of spontaneous rupture of splenic artery during pregnancy has been reported to be 75% and 95% respectively.^{4,5} Grand multiparous form about 40% of women with splenic artery aneurysm³ as with our patient. Atherosclerosis, essential hypertension, trauma, septic embolism, liver disease and portal hypertension seem to play a role in atherosclerotic weakening of the splenic artery wall and formation of an aneurysm.¹ The exact relation to pregnancy is still unknown but it has been related to the increased splenic artery blood flow caused by the pressure of gravid uterus and increased level of elastin hormone during pregnancy affecting the elasticity of vascular tissue contribute to rupture of the aneurysm.³ It has been suggested that patients with Alpha1-antitrypsin deficiency were at increased risk of the presence and rupture of splenic artery aneurysm.⁶

Acute left upper quadrant pain and shock usually indicate rupture of the aneurysm, which occurs in 5%-10% of the cases.⁷ Most patients present as sudden, unexpected shock or even death.⁸ Our patient had abdominal pains for few days before admission and the clinical picture was confused with abruptio placenta and ruptured uterus. Double rupture phenomenon has been described where bleeding is initially tamponaded by omentum or a large blood clot that obstructs Winslow's foramen.^{2,9} Our patient had a multiple aneurysms at splenic artery and only one of them ruptured.

Splenic artery aneurysm can be diagnosed using X ray, ultrasound or duplex examination, and appears as hypoechoic masses with holosystolic waveform. On CT scans, it appear as well defined masses with or without calcifications. Our patient was diagnosed post caesarian section with abdominal CT with contrast and splenic artery angiogram. Splenectomy had been the most common surgical treatment.³ Ligation of the artery or resection of the aneurysm have been performed. However, once rupture has occurred, spleen may be resected along with the aneurysm. Splenic artery embolization is an important treatment modality,¹⁰ as in our patient. In conclusion, this case shows that

ruptured splenic artery aneurysm should be considered as a rare differential diagnosis of acute abdomen and hemoperitoneum in a pregnant women.

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