

SPONTANEOUS RUPTURE OF THE UTERINE ARTERY IN PREGNANCY

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Accepted 6th September, 2012

ABSTRACT

Background - Spontaneous rupture of the uterine artery in pregnancy causing life threatening haemorrhage is a rare event. Only four such cases have been reported. To our knowledge, this is the first reported case of rupture due to ectopic decidual tissue. **Case** - G3P0 at 27 weeks gestation presented with severe lower abdominal pain. Concealed placental abruption was suspected. Caesarean section revealed profuse bleeding from the ruptured right uterine artery which was sutured. A sample of tissue from the site of rupture sent for histological analysis has been demonstrated to be 'ectopic decidual tissue.'

Conclusion - Obstetricians should be aware of this rare cause. Establishing any underlying factors is important as it helps in understanding the diagnosis and also in counselling the patient regarding prognosis for future pregnancies.

KEYWORDS: Spontaneous rupture of the uterine artery, causing life threatening haemorrhage, ectopic decidual tissue.

INTRODUCTION

We present a case of a 32 year old Gravida 3 Para 0. Her first two pregnancies ended as first trimester missed miscarriages for which she underwent surgical evacuation of products of conception. The index pregnancy was found to be a twin pregnancy at 7 weeks gestation but unfortunately the patient miscarried one of the twins in the first trimester. On ultrasound scan the uterus was found to be bicornuate with a viable pregnancy in the right horn of the uterus. The pregnancy was uneventful until 27 weeks of gestation when the patient was brought to the Accident and Emergency department with a history of sudden onset of severe lower abdominal pain and syncope. She denied abdominal trauma and had no vaginal bleeding. She was distressed and in severe pain but her pulse rate and blood pressure remained normal. On examination, the uterus was tender, soft and corresponded in size to the gestation. Fetal heart rate was normal and reactive. A concealed placental abruption was suspected, although the findings of a normal fetal heart rate and a soft uterus were puzzling.

The patient was managed in a high dependency room on the delivery suite and an ultrasound scan was planned for the following morning. Electronic foetal heart monitoring continued to be reassuring. Full blood count, clotting profile and serum biochemistry were within normal limits. Eight hours later the patient's condition suddenly deteriorated with worsening abdominal pain, increasing abdominal distension, a fall in blood pressure from 120/80 to 90/40, a

rise in pulse rate from 80 to 110 bpm and persistent variable decelerations on the cardiotocogram.

The patient was resuscitated and a laparotomy was performed. 2 litres of blood were found in the peritoneal cavity. As the source of bleeding could not be identified a lower uterine segment caesarean section was performed. A live female infant was delivered whose birth weight corresponded to the gestational age with satisfactory apgar scores. The liquor was clear and there was no evidence of retroplacental haematoma. The uterus was confirmed to be bicornuate and careful inspection excluded uterine rupture. Examination of the pelvis revealed profuse bleeding from the right pelvic side wall where a 3x3 cm area of granulation like tissue was present with evidence of a ruptured blood vessel adjacent to this. A sample of this tissue was sent for histological analysis. With the help of a vascular surgeon the area was dissected and the right uterine artery was found to be ruptured. The external appearance was not suggestive of an aneurysm and the defect was sutured. There was no other source of intra-abdominal bleeding. The patient made an uneventful post operative recovery following transfusion of 8 units of blood and 4 units of fresh frozen plasma peroperatively.

The histological examination of the tissue sent from the pelvic side wall was demonstrated to be 'ectopic decidual tissue'.

DISCUSSION

Spontaneous rupture of the uterine artery in pregnancy causing life threatening haemorrhage is a rare event. A literature search has unveiled only four such cases previously reported. (1,2,3) In none of these cases was there any aetiological factor described. Our case differs in that tissue adjacent to the site of the uterine artery rupture demonstrated decidual reaction, which could have been contributory.

Ectopic decidual reaction of the peritoneal surface causing rupture of the uterine artery and catastrophic intraabdominal haemorrhage has so far not been documented and to our knowledge this is the first reported case. Sporadic cases of ectopic decidual tissue in pregnancy have been reported, and ectopic decidual tissue has been demonstrated to be the source of bleeding from peritoneum, omentum, bowel, pelvic lymph nodes, ovary and cervix.(4) The aetiology of ectopic decidual tissue in pregnancy is unclear. Various aetiologies have been postulated but a consistent explanation remains to be found. It is thought to

be a physiological phenomenon related to the possible specialized sensitivity of the superficial coelomic epithelium and stroma to progesterone and transformation to decidual tissue. The other plausible explanation is iatrogenic deposition of endometrial cells on the pelvic side wall at the time of previous uterine perforation. This patient underwent surgical evacuation of the uterus in her first two pregnancies following miscarriage. Both procedures were documented as being uneventful, however, accidental asymptomatic uterine perforation is possible. The Ectopic endometrial cells may subsequently undergo decidual change in response to high levels of progesterone in pregnancy. This proliferating decidual tissue on the pelvic side wall of our patient could have caused weakness of the stroma predisposing to rupture of the uterine artery at this site.

Establishing any underlying factors for the uterine artery rupture is important as it helps in understanding the diagnosis and also in counselling the patient regarding prognosis for future pregnancies. If the rupture was due to a physiological phenomenon which is very rare, it is unlikely to recur. On the contrary, if it was due to previous uterine perforation and damage to the pelvic side wall, the chances of recurrence seem more likely.

CONCLUSION

Rupture of the uterine artery is one of the rare causes of abdominal pain and haemodynamic compromise in pregnancy. The correct diagnosis is difficult to make prior to a laparotomy. Obstetricians should be aware of this rare cause. The only treatment for this condition is controlling the haemorrhage. It would possibly help to establish a diagnosis if any tissue sample from the site of rupture is sent for histological analysis.

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