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Case Report

SECOND TRIMESTER CORNUAL RUPTURE OF AN INTRAUTERINE PREGNANCY

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ABSTRACT
Ruptured uterus is an obstetrical emergency usually seen in women with prior history of uterine surgery in their third trimester. Rupture of unscarred uterus in second trimester is extremely rare. Here we report a case of a 24 year old with 14+4 weeks of gestation with cornual rupture of intrauterine pregnancy. The case was referred from periphery centre in view of anemia and during the stay in hospital underwent spontaneous rupture which was promptly diagnosed and successfully managed with laparotomy, followed by cornual resection.

Keywords: *Cornual Rupture, Second Trimester rupture, Spontaneous rupture*

INTRODUCTION
Ruptured uterus is an obstetric and surgical emergency that can lead to maternal or fetal death. Uterine rupture happens usually during third trimester or during delivery, along the previous Caesarean scar. Rupture of unscarred uterus is not only rare but also has grave maternal and fetal prognosis.(Ahmadi S *et al*.,2003)

Rupture of the uterus may also be seen in the second trimester, occurring after induction for pregnancy termination in scarred uterus most of the time. The incidence of uterine rupture at second trimester pregnancy termination by misoprostol is reported at 0.4% with one prior low transverse cesarean delivery (Berghella V *et al*., 2009). Spontaneous rupture of the uterus in the second trimester is very rare. Placenta percreta as well as scar pregnancy have been thought as predisposing factors of spontaneous midtrimester uterine rupture. But without any medication for induction and placenta percreta, spontaneous rupture in midtrimester is a noteworthy condition. Additionally, the rupture site being the cornu (upper segment) with its thick myometrium and profuse blood supply makes the case more serious and life threatening. Cornual rupture caries 2-5 times more risk of mortality than lower segment ruptures.

CASES
A 24 year old female was referred from peripheral centre on 27/11/2017 with a diagnosis of G2A1 with 14+4 weeks of gestation with severe anaemia not in cardiac failure. She had no complaints and did not remember her last menstrual period which according to her was 3 months back. Previously she had one spontaneous abortion at 3 months of gestation for which suction evacuation was done about 2 years back which according to her was uneventful but no written records of the procedure were available. She had no other significant past medical or surgical history. There was no history of intake of abortificient drugs. Investigations brought by her revealed normal antenatal profile with A +ve blood group and ultrasound suggestive of single intrauterine gestational sac with 14 + 6 weeks of pregnancy. On examination, a moderately built and a moderately nourished middle aged female was seen, with a severe degree of pallor, moderate oedema, a pulse of 110 bpm and a blood pressure of 90/60mm of Hg. Her chest and cardiovascular examination was normal. Abdominal examination revealed soft distension with sluggish bowel sounds. Her vaginal examination revealed soft bulky uterus of about 12 weeks size with bilateral fornices free and non tender. All the laboratory investigations were within normal limits, except haemoglobin, which was 3.9 gm%. Blood and blood products were transfused as per transfusion protocols, Ryles tube was inserted (No aspirate).She was maintaining her vitals and abdominal girth however distension persisted. Repeat Ultrasound whole abdomen revealed moderate ascites with sluggish

peristalsis (liver, gall bladder and bilateral kidneys were normal) along with a single intrauterine gestation of 12 weeks and 6 days with good choriodecidual reaction. Her haemoglobin was built upto 7.7g/dl.
On 30/11/2017 (3rd day after admission), patient complained of giddiness and acute onset of severe lower abdominal pain which was colicky in nature and radiated to both shoulders. On examination, her pulse was 130 bpm, BP was 60/40mm. Her abdominal examination revealed generalised tenderness with tense distension. Her vaginal examination revealed cervical tenderness, her uterus size could not be assessed because of this tenderness and her fornices were full. There was no bleeding per vaginum. Paracentesis showed a haemoperitoneum. Provisional diagnosis of rupture was made, resuscitation was started with iv fluids and blood transfusion and patient was shifted for laprotomy after consent.
On opening the abdomen, about 2L of fresh haemoperitoneum was present . The cornu of the right side was ruptured anteriorly and bleeding profusely. A fetus of about 12-13 weeks of gestation was present in the abdominal cavity with cord attached to placenta which was protruding from the ruptured cornu [Figure1]. Placenta was easily removable from the rupture site ruling out accreta. Left cornu was normal. The uterus was otherwise looking unscarred. Bilateral tubes and ovaries were normal. The bleeding area was clamped. The ruptured cavity was in communication with the intrauterine cavity. Cornual resection and repair was done with an attention to maintain anatomic structure of uterus and adenexa. A total of 7 units of packed red blood cell and 6 units of fresh frozen plasma were transfused. The patient was monitored in the intensive care unit for 48 hours. The postoperative period was uneventful and patient was discharged in good condition on 6th postoperative day. She was followed up after 1 month and she did not have any complaints.

Figure 1: Fetus with attached cord and placenta

DISCUSSION

Uterine rupture, especially in unscarred uterus is extremely rare in first and second trimester of pregnancy and is usually diagnosed intra-operatively. (Arabab *et al*., 1996; Park *et al*,. 2005)

Rupture of the uterus in the second trimester predominantaly occurs in scarred uterus usually following induction for pregnancy termination. In this case, there was no history of intake of abortificient drug nor was there any history of previous cesearean or myomectomy surgery scarring the uterus. Uterine rupture at this early pregnancy stage may be attributed to complications of the previous suction evacutaion that may have damaged the endometrium. This emphasises the importance of medical history, and that the patient and spouse should be informed and keep records of previous surgeries to have a high index of suspicion. Other risk factors like grand multiparity, advanced maternal age and uterine malformations were not present in this case.

Spontaneous uterine rupture in early pregnancy poses a diagnostic challenge, as initial symptoms may be vague and non-specific. The onset of abdominal pain may begin hours and even days prior to the diagnosis of uterine rupture. In the absence of a scar from previous surgery, clinical suspicion of uterine rupture in early pregnancy may be further lowered. Urinary tract or gastrointestinal tract symptoms may be present as well, serving as red herrings that prompt considerations and empirical treatment for other causes of abdominal pain in pregnancy such as gastroenteritis, urinary tract infection and appendicitis. Ruptured cases with massive haemoperitoeum usually present with severe pain abdomen with features of haemodynamic instability.

Ultrasound may be considered as a tool in patients who are hemodynamically stable to support or establish the diagnosis. Findings include protrusion of the amniotic sac in peritoneal cavity, endometrial or myometrial defect along with extra-uterine haematoma or haemoperitoneum. In cases with acute presentation and haemodynamic instability (as in our case), strong clinical suspicion along with paracentesis suggestive of haemoperitoneum helped clinch the diagnosis and immediate management was done.

Emergency laparotomy with extraction of the fetus and hemostasis is the cornerstone of treatment. Unlike rupture in the lower uterine segment in the third trimester or during delivery, the common site of rupture in the first trimester is the fundal region (Faguer 2008; Nagy 2009). Recent publications reveal that morbidly adherent placenta causes early uterine rupture (Job *et al*., 2014; Kinoshita *et al*; 2006) In this case, the site of rupture was unusual as the rupture was not from the fundus but from the cornu. A postulated etiology for the spontaneous uterine rupture might be that of abnormal position of placental implantation at the cornu from uterine scarring from her previous evacuation of uterus. No such case of spontaneous rupture through cornu has been reported yet.

Hemostasis is usually achieved with either primary repair of the defect or hysterectomy if the bleeding is not controlled adequately. Successful continuation of the pregnancy had only been reported in 2 instances (Wang *et al*., 2009; Chen 2007); in both cases, the defect was small and the fetus remained in-utero.

In this case, the fetus was already in the abdominal cavity and the bleeding from rupture site was profuse owing to the enoronous blood supply to the cornu from both uterine and ovarian artery. However, prompt diagnosis of the rupture followed by successful cornual resection helped in achieving complete haemostatsis and thus not only avoided hystrecromy but also conserved the uterine and tubo ovarian architecture.

Conclusion

This report highlights the significance of a history of evacuation of uterus predisposing to abnormal placenta implantation and spontaneous early pregnancy uterine rupture. Despite the gestation, in women presenting with symptoms and signs suggestive of acute abdomen and hemodynamic instability, prompt resuscitation must be instituted, and a high index of suspicion for rupture must be considered. Ultrasound is a useful tool to aid in establishing the diagnosis even in early pregnancy and should be considered if the facility is rapidly available and situation permits. Prompt diagnosis and management can significantly decrease maternal morbidity and mortality.

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