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Case Report

Recurrence of a second trimester fundal uterine rupture at the old scar site: A case report [☆]

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ABSTRACT

Uterine rupture is a rare life-threatening complication. It can occur in all 3 trimesters with the first and the second being a rarity. It mainly occurs in the third trimester or during labor in a previously scarred uterus. It is rare in an unscarred uterus. The risk fold is further enhanced by the induction and augmentation with prostaglandins and oxytocin. The clinical diagnosis at this early gestation can be a dilemma to the attending physician as in this case. (1) The patient was a holidaymaker with no documented evidence of a dating scan to suggest any evidence of an ovarian/placental pathology at that stage. (2) The ultrasound findings in our department did suggest a viable intrauterine pregnancy with free fluid within both the adnexa. A 6 cm solid homogenous mass in the midline/right adnexa suggested an ovarian torsion or bowel pathology. The differentials in this particular case were that of a ruptured hemorrhagic cyst, ovarian torsion and even a heterotrophic pregnancy as there had been a few documented cases in the department. Ultrasound diagnosis of an intrauterine pregnancy together with a fluid collection does not suggest by any means that the uterus is intact or there is no ectopic pregnancy.

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Introduction

Uterine rupture is a serious obstetric complication with a wide array of contributing factors which include previous uterine surgery such as a caesarean section, myomectomy (la-

paroscopy/open), hysteroscopy surgery, iatrogenic uterine perforation, congenital uterine anomalies, abnormal placentation (PAS), multiparty etc. It is rarer in an unscarred uterus. Due to its rarity in the very early trimesters, its presentation and its course of events may vary and make the diagnosis a challenge more so when junior colleagues are involved in

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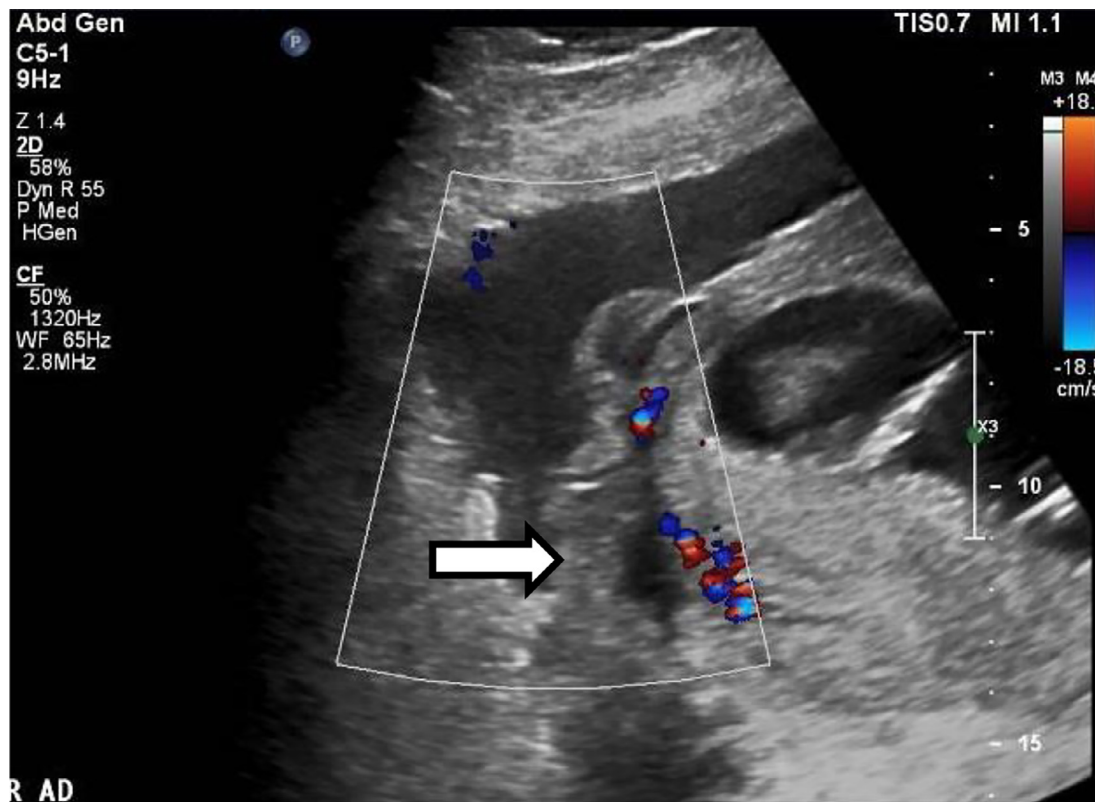


Fig. 1 – Homogenous echogenic mass extending in the Pouch of Douglas adjacent to the uterus with Doppler flow.

their care. The lack of a high index of suspicion and the failure to understand the anatomy and physiology of a pregnant woman diverts the attention to other gynecological and non-gynecological causes which may have a profound impact on the patient. We present the rare case of recurrence of spontaneous rupture at 14 weeks of gestation with intrauterine fetal demise. The singularity of our case is the occurrence of a second spontaneous rupture located at a site other than the old scars.

Case report

A 34-year-old gravida 5 Para 2, who was 14 + 5 weeks pregnant presented to the emergency department in the early hours of the morning with sudden severe onset of acute lower abdominal pain and vaginal bleeding with associated shoulder tip pain worsening over the course of the morning. This was her third pregnancy. The first was an uncomplicated spontaneous vaginal delivery followed by an emergency caesarean section at 38 weeks gestation due to a profound unprovoked episode of shoulder tip pain, uterine contractions and fetal distress. During the procedure there was a small amount of blood noted in the abdominal cavity with a small but significant fundal rupture in the uterus. It was repaired in 2 layers. Of note, the patient did disclose that she had 2 previous surgical terminations of pregnancies prior to her last pregnancy.

On admission, she was stable with a blood pressure (BP) of 124/80 mm Hg, pulse rate (PR) of 74, respiratory rate (RR) of 18 and oxygen saturations (SpO₂) of 100% in air. Her pain score was 8–9/10 requiring intravenous morphine. Intravenous fluids were also commenced. In view of her being hemodynamically stable she was then transferred to the ward. Her Hb was 9.1g/dL. Over the course of the morning, her abdominal and shoulder pain worsened. She maintained her blood pressure initially but was becoming increasingly tachycardiac and hypotensive. An urgent scan performed, suggested a viable intrauterine pregnancy with a significant amount of free fluid within both the adnexa with a depth of 7.3 cm. There was also a 6 cm solid homogenous mass located in the midline to the right adnexa (Figs. 1 and 2). A repeat Hb was 7.0g/dL. Due to the ambiguous nature of the scan report, the differential diagnosis was that of a ruptured hemorrhagic ovarian cyst, ovarian torsion and that of a heterotrophic pregnancy. The patient did comment that the pains were very similar to that when she had a fundal uterine rupture at 38 weeks gestation (Fig. 3).

The patient was consented and prepped for theatre. Initial laparoscopy revealed a 3L hemoperitoneum, omental adhesions and a significant 6–7 cm dehiscence which progressed into a large fundal dehiscence. Placenta extruded through the thinned and gaping defect with membranes. A laparotomy was performed necessitating the need to a hysterotomy. A balloon tamponade was left as a security owing to the uterine atony and was removed without difficulty the following morning. Two units of blood transfusion with cryoprecipitate during the operation and in the immediate recovery period were

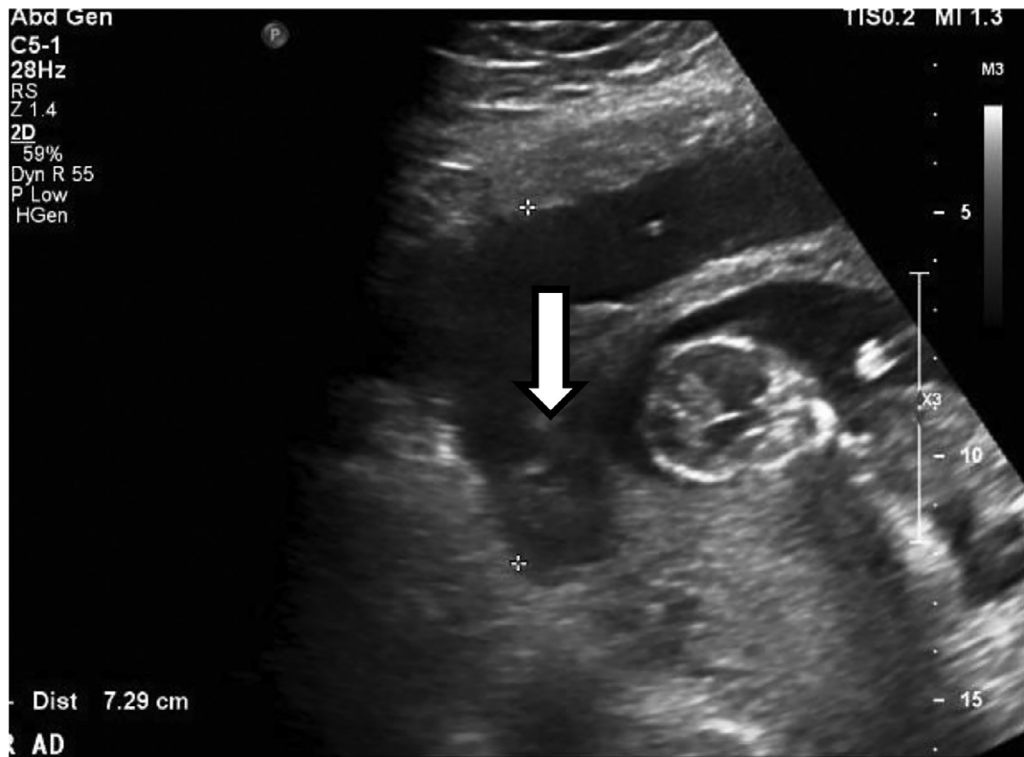


Fig. 2 – Breach in the myometrium with membranes.

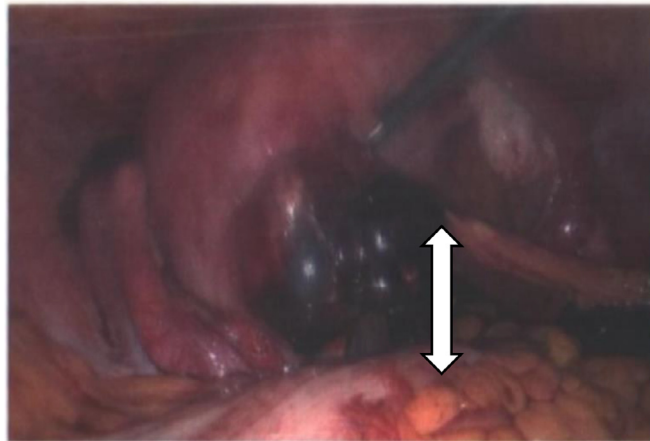


Fig. 3 – Placental tissue extruding through the uterine defect.

required. The patient did have a stormy recovery mainly on the high dependency unit for the first couple of days due to a significant post-operative ileus. During her stay the couple received support from the Bereavement midwives. She was discharged on day 7.

The couple were debriefed 6 weeks post-surgery. For the future, it was discussed that scans do not predict a sufficient tensile strength of the myometrium to withstand another pregnancy and in short, the likelihood of a repeat rupture at this gestation remains high. The risk of rupture continues right across pregnancy and is associated with a traumatic delivery and extremely suboptimal foetal outcome as well as increase in maternal morbidity including a hysterectomy. They were

very committed to having a child together and were planning on surrogacy.

Discussion

Uterine rupture in the first and second trimester is rare and usually diagnosed intra-operatively [1–3]. The most common site of rupture occurs around the fundal region [2,4]. Untimely diagnosis and a low index of suspicion could be life-threatening. Ultrasound diagnosis of an intrauterine pregnancy with fluid collection does not necessarily mean that

the uterus is intact or there is an ectopic pregnancy. As highlighted in our case, we feel that ultrasound examination has a limited scope and urgent surgery is warranted to prevent sequelae of complications. Retrospectively the clinicians should have thought about uterine rupture as the initial diagnosis rather than searching for other gynecological causes- Heterotrophic pregnancy and a ruptured hemorrhagic cyst. Uterine rupture accounts for about 14% of all hemorrhage related mortality. Her medical history clearly did suggest a fundal rupture at term which was most probably related to a perforated complete or incomplete occult iatrogenic uterine perforation following a surgical termination of pregnancy. She also had classic signs of severe abdominal pain associated with vomiting and had some vaginal bleeding [5]. Also in her history, she makes a clear comparison of similar pains related to her previous pregnancy with the fundal perforation. The clinicians were misled by the scan findings [6] and also had a low index of suspicion for uterine rupture which then led to a significant delay in her management with a 3 L hemoperitoneum, necessitating the use of blood products, significant post- op ileus and a prolonged hospital stay.

One should always be aware of the anatomical and physiological changes that take place in order to nurture and accommodate the developing fetus. A pregnant woman is physiologically prepared to lose up to 2 L of blood without any detectable hemodynamic changes. When blood loss approaches 2.5 L she can deteriorate dramatically and hence prompt action and intervention is necessary [7].

The subsequent pregnancy outcome after conservative management of a uterine rupture has been studied in several small case series. The prevalence of recurrence based in these series suggests being within a wide range of approximately 0%-33% [8,9]. Although the presence of a previous uterine scar been described as the main cause of uterine rupture [10,11], some recent studies suggesting the abnormal placental accreta syndrome being the most common underlying etiology [12]. Uterine rupture is even present in early gestations in the absence of any risk factors or an underlying medical cause.

Conclusion

Uterine rupture should be carefully considered as a leading differential in all pregnant women who present with an acute abdomen, show fluid collection in the peritoneal cavity and

have specific risk factors. The importance of a timely diagnosis and optimal management goes a long way in reducing both the morbidity and mortality in such patients.

Patient consent

We can confirm that written, informed consent for publication of their case was obtained from our patient.

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