



Spontaneous Antepartum Posterior Wall Uterine Rupture in an Unknown Pregnancy

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ABSTRACT

Background: Uterine rupture is a rare but fatal complication of pregnancy, which should be diagnosed and treated promptly. Majority of rupture occur during labor in scarred uterus, though very rare, uterine rupture may also occur antepartum.

Case Report: A 32-year-old woman presented with spontaneous antepartum posterior wall uterine rupture with an unknown pregnancy, complaining with abdominal pain and impaired consciousness. At physical examination, she had a firm fullness at abdomen. The ultrasound was inconclusive due to intra-abdominal gas, except for pelvic free fluid, and computed tomography scans showed an intra-abdominal dead fetus. Surgery revealed a wide perforation at the posterior wall of uterus and massive hemoperitoneum, in addition to a dead fetus. The patient underwent hysterectomy due to poor tissue quality and extensive perforation. She made an uneventful recovery and was discharged at the end of 2 week.

Conclusion: Correct clinical history plays a major role in diagnosis. An enlarged uterus in a patient with previous cesarean section should alert the radiologist for uterine rupture. Whenever ultrasound imaging is insufficient to clarify the clinical manifestation, further imaging should be obtained.

Keywords: Acute abdomen, uterine rupture, posterior wall, antepartum, computed tomography

INTRODUCTION

Acute abdomen is an important cause of emergency room (ER) admissions. The major diagnostic tools – history and physical examination – as well as imaging studies aid the clinician in the diagnosing process. Ultrasound is usually the method of choice for acute abdomen evaluation; however, it may not always be conclusive.

Uterine rupture is a rare but fatal complication of pregnancy, which should be diagnosed and treated promptly (1). Majority of ruptures occur during labor in the scarred uterus, particularly if the labor is augmented, and have a typical presentation with vaginal bleeding, abdominal pain, and decreased fetal heart rates (2, 3). Although very rare, uterine rupture may also occur antepartum, in which case the clinical manifestations are not so unique and may be easily confused with other clinical entities (1). Herein, an antepartum uterine rupture case with an intra-abdominal dead fetus is presented, who had abdominal pain and impaired consciousness, but gave no history of pregnancy.

CASE REPORT

A 32-year-old woman was admitted to ER with abdominal pain for 3–4 days followed by impaired consciousness and vaginal bleeding. At initial clinical examination, the patient was conscious and oriented, but showed poor cooperation and poor general condition. Her blood pressure and heart rate were 80/50 mmHg and 124 bpm, respectively. She had tachypnea (30 breaths/min). Her blood tests showed white blood cell: 10,000/ μ L with neutrophilic predominance (87%), Hb: 9 g/dl, plt: 148,000/ μ L, BUN: 91mg/dL, cre: 4 mg/dL, AST: 313 U/L, ALT: 685 U/L, alb: 2.3 g/dL, Ca: 6.7 mg/dl, and K: 5.9 mmol/L. She had severe acidemia (ph: 7.12).

Physical examination revealed a distended abdomen with decreased intestinal sounds. At palpation, there was a firm fullness suggesting a mass or pregnancy. Since she was not cooperating, her husband was referred for history; he noted that she had regular menstrual cycles. She had three pregnancies and three live births by cesarean section (C/S) (G3P3). The last time she gave birth was 3 years ago.

Ultrasonography (US) was not conclusive due to extensive gas superposition and only subhepatic and pelvic dense free fluid was detected. Clinical deterioration of the patient and the history led the ER physician to suspect a possible perforation. After her vitals were stabilized, a contrast-enhanced abdominal computed tomography (CT) was obtained. CT scan revealed massive intra-abdominal free gas and fluid, and an intra-abdominal dead fetus. There was also massive free gas in the fetal body cavities and subcutaneous tissue (Fig. 1a). The fetal head was deformed

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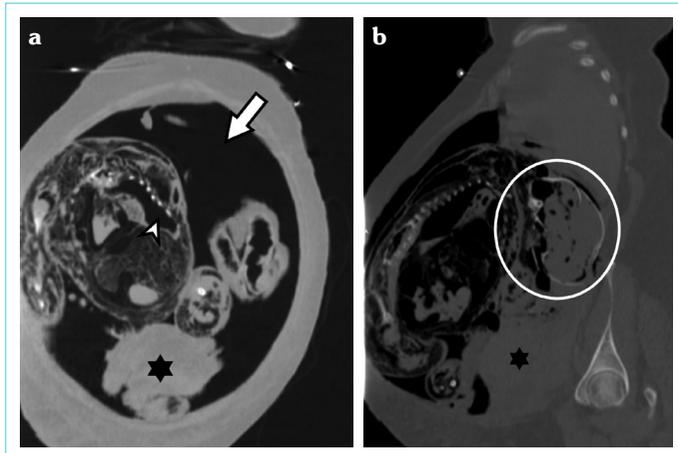


Figure 1. (a) Coronal image from anterior abdomen shows the fetal torso with free air surrounding the lungs (arrowhead) and extensive subcutaneous emphysema. Maternal intra-abdominal free gas (arrow) encircles the fetus. Note the enlarged uterus (asterisk). (b) Sagittal reformatted image displays the fetus extruded into the abdominal cavity. Spalding's sign is present (circle). Enlarged uterus is posteriorly located (asterisk)

and Spalding's sign was present. The uterus was enlarged and located posterior to the fetus (Fig. 1b).

The patient was consulted with obstetrics department. The trans-abdominal US was reperformed to assess fetal heartbeat; however, a clear view of the fetus could not be obtained. The patient was cooperated by obstetrics and general surgery departments. The exploratory laparotomy revealed that the fetus was partially extruded into the maternal abdomen. It was macerated and edematous. There was extensive hemoperitoneum. Uterus was perforated at posterior side extending from infundibulopelvic ligament to vagina. The cesarean scar was intact. There was no obvious uterine or placental abnormality. Retroperitoneum was spontaneously open and showed areas of necrosis. The patient underwent hysterectomy due to poor tissue quality and extensive perforation. There was no other pathology detected in other abdominal organs.

Postoperatively, the patient was taken to intensive care unit. She made an uneventful recovery and was discharged at the end of 2 weeks.

DISCUSSION

Acute abdomen is an important cause of ER admissions. History, physical examination, and imaging studies help the clinician in the diagnosing process, while false or incomplete history and suboptimal imaging may lead to misdiagnoses. US is a safe and cheap diagnostic tool that does not use ionizing radiation. It is usually the method of choice in ER in patients with acute abdomen. However, the technical efficiency may be altered by patients' cooperation, presence of gas in the examination area, calcified surfaces and increased thickness of subcutaneous fat tissue, and results in suboptimal examinations. If the US findings are insufficient or cannot clarify the clinical manifestations of the patient, further imaging should be obtained without any delay.

Uterine rupture is a rare complication of pregnancy which may lead to catastrophic consequences. Its immediate diagnosis and management is important. Majority takes place at scarred uterus during labor and has a dramatic presentation with continuous abdominal pain, vaginal bleeding, and abnormal fetal heart rate (2). According to a systematic review of maternal morbidity and mortality by the World Health Organization in 2005, the median incidence of uterine rupture is 5.3 per 10,000 deliveries (4). The most common risk factor is a previous C/S; in which the rupture usually occurs through the scar during labor (5). Other risk factors include history of myomectomy, trauma, uterine evacuation, uterine abnormalities, placental abnormalities such as placenta percreta and previa, and prolonged labor. Spontaneous rupture has been reported after uterine artery embolization or in unscarred uterus as well. Maternal age has also been associated with increased risk (6–10).

While uterine rupture is generally reported during labor, antepartum rupture is very rare. Majority of the literature on this subject consists of case reports (6–9, 11, 12). Risk factors include scarred uterus, abnormal placentation, short interval between pregnancies, and previous history of uterine rupture (1). Antepartum rupture may not show any clinical sign other than vague abdominal pain particularly if the amniotic sac is intact (2). The pain may be nonspecific at first and these patients are usually initially misdiagnosed as appendicitis, urinary tract infections, or gastroenteritis (1). Although fetal heart bradycardia is one of the most common presentations of uterine rupture, a reactive non-stress test may also be encountered and lead to delayed diagnosis (11). Ramphal et al. (2) also underlined the diagnostic confusion of advanced extrauterine pregnancy and antepartum uterine rupture. Enlarged uterus in a patient with previous C/S should alert the radiologist for uterine rupture.

Our patient had no history of any other procedure involving uterus other than C/S. No medication involving prostaglandins was given. There was also no placental abnormality and her last child was born 3 years ago.

Although in patients with previous C/S rupture is generally through the scar, posterior wall rupture with intact scar during labor was also reported in few cases in literature (3, 11, 13).

Our case also underlines the importance of correct clinical history. Our patient had impaired consciousness and her husband misinformed the clinicians that she was menstruating. Therefore, the firm fullness in the abdomen was initially thought to be related to a mass and massive intra-abdominal gas in the ultrasound was attributed to possible gastrointestinal perforation. Neither the fetus nor the uterus was not visualized by US because of the strong reflective surface caused by both maternal intra-abdominal gas and fetal subcutaneous emphysema. Absence of pregnancy history and non-visualization of the enlarged uterus drove the clinicians away from the actual diagnosis. CT was obtained and finally revealed the real underlying pathology.

CONCLUSION

Correct clinical history plays a major role in diagnosis. Whenever ultrasound imaging is insufficient to clarify the clinical manifestation, further imaging should be obtained. Uterine rupture

is a rare but fatal complication of pregnancy, which should be diagnosed and treated promptly. Uterine rupture at labor has a significant clinical manifestation; however, antepartum rupture may present with vague abdominal pain. Enlarged uterus in a patient with previous C/S should alert the radiologist for uterine rupture.

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REFERENCES

- Vaknin Z, Maymon R, Mendlovic S, Barel O, Herman A, Sherman D. Clinical, sonographic, and epidemiologic features of second-and early third-trimester spontaneous antepartum uterine rupture: A cohort study. *Prenat Diagn* 2008; 28(6): 478–84. [\[CrossRef\]](#)
- Ramphal SR, Moodley J. Antepartum uterine rupture in previous caesarean sections presenting as advanced extrauterine pregnancies: Lessons learnt. *Eur J Obstet Gynecol Reprod Biol* 2009; 143(1): 3–8.
- Navaratham K, Ulaganathan P, Akhtar MA, Sharma SD, Davies MG. Posterior uterine rupture causing fetal expulsion into the abdominal cavity: A rare case of neonatal survival. *Case Rep Obstet Gynecol* 2011; 2011: 426127. [\[CrossRef\]](#)
- Hofmeyr GJ, Say L, Gülmezoglu AM. WHO systematic review of maternal mortality and morbidity: The prevalence of uterine rupture. *BJOG* 2005; 112(9): 1221–8. [\[CrossRef\]](#)
- Andonovová V, Hruban L, Gerychová R, Janků P, Ventruba P. Uterine rupture during pregnancy and delivery: Risk factors, symptoms and maternal and neonatal outcomes retrospective cohort. *Ceska Gynekol* 2019; 84(5): 121–8.
- Wachira L, De Silva L, Orangun I, Shehzad S, Kulkarni A, Yoong W. Spontaneous preterm recurrent fundal uterine rupture at 26 weeks following laparoscopic myomectomy. *J Obstet Gynaecol* 2019; 39(5): 731–2. [\[CrossRef\]](#)
- Berzon B, Gleenberg M, Offenbacher J, West D. Atypical presentation of hemorrhagic shock in pregnancy: A case lightening the developing field of emergency medicine in Israel. *BMC Emerg Med* 2019; 19(1): 709. [\[CrossRef\]](#)
- Takeda J, Makino S, Ota A, Tawada T, Mitsuhashi N, Takeda S. Spontaneous uterine rupture at 32 weeks of gestation after previous uterine artery embolization. *J Obstet Gynaecol Res* 2014; 40(1): 243–6.
- Amro B, Lofti G. Spontaneous rupture of an unscarred uterus in early pregnancy: A rare but life threatening emergency. *BMJ Case Rep* 2019; 12(5): e22849. [\[CrossRef\]](#)
- Hochler H, Wainstock T, Lipschuets M, Sheiner E, Ezra Y, Yagel S, et al. Grandmultiparity, maternal age, and the risk for uterine rupture: A multicenter cohort study. *Acta Obstet Gynecol Scand* 2020; 99(2): 267–73. [\[CrossRef\]](#)
- Abdalla N, Reinholz-Jaskolska M, Bachanek M, Cendrowski K, Stanczak R, Sawicki W. Heomperitoneum in a patient with spontaneous rupture of the posterior wall of an unscarred uterus in the second trimester of pregnancy. *BMC Res Notes* 2015; 8(1): 603. [\[CrossRef\]](#)
- Chen SH, Du XP. Silent spontaneous posterior uterine rupture of a prior caesarean delivery at 36 weeks of gestation. *BMC Pregnancy Childbirth* 2019; 19(1): 23. [\[CrossRef\]](#)
- Sharma PG, Rajderkar DA. Confirmation of posterior uterine rupture in the second trimester by magnetic resonance imaging. *J Neonatal Perinatal Med* 2017; 10(2): 199–202. [\[CrossRef\]](#)