Case study

Second trimester Uterine Rupture of an Unscarred uterus in a Primigravida: A Case Report

Abstract

Antepartum uterine rupture in an unscarred uterus is extremely rare. Uterine rupture in early pregnancy in nulliparous women is a rare and unpredictable occurrence with high maternal morbidity and fatal fetal outcomes . Undiagnosed uterine perforation could be the cause of this dangerous condition underestimated in the literature. We report a rare case where undiagnosed uterine perforation during curettage could be the cause of uterine rupture.

Keywords : rupture uterus, spontaneous, unscarred uterus

Introduction

Spontaneous uterine rupture in the second trimester of an unscarred uterus is rare and carries severe risk to both mother and fetus compared to scarred uterus.[1] The causes of rupture of unscarred uterus include grandmultipara, injudicious use of oxytocics, uterine anomalies, internal podalic version with breech extraction, external cephalic version, instrumentation like forceps application or vaccum extraction.[2] A few cases of primary antepartum uterine rupture have been reported where no direct etiology is found. Pre-labour rupture of uterus is a rare identity. We present a rare case of spontaneous rupture at 18 weeks of gestation in a primigravida where no direct etiology was found.

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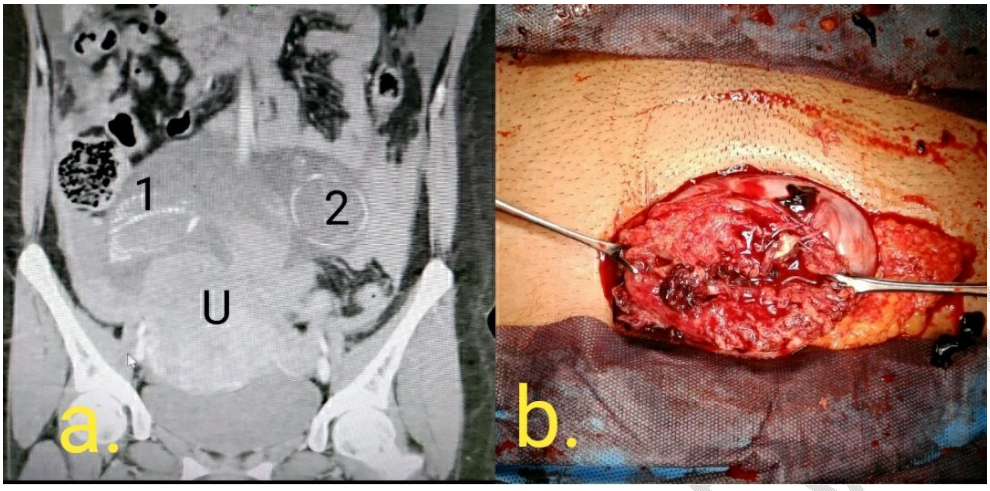
Case report

A 32 year old primigravida at 18 weeks of gestation with a dichorionic- diamniotic twin pregnancy reported to the emergency department with history of pain in the epigastric region. Eight months back she underwent a diagnostic hysteroscopy and laparoscopy as a part of infertility work-up. No electrosurgical procedures were performed. On examination, her blood pressure was 116/60 mm Hg and her pulse rate was 138 beats per minute. On abdominal examination uterine fundus was tender. Sonography showed twin pregnancy with absent cardiac activity of both fetuses with free fluid in the abdomen. Ultrasonographic findings were suspicious of uterine rupture but there was no correlation with her history given her parity status and gestational age. Hence emergency CT abdomen(Fig 1) was done and it showed loss of myometrial architecture with fluid in the abdomen suggestive of uterine rupture. She was stabilized and taken up for an emergency laparotomy which revealed massive hemoperitoneum with both the fetuses and placenta in the abdominal cavity. A uterine rupture of 6 cm length was noted in the fundal region. (Fig 2) The uterine defect was repaired with a continuous double layer closure with 1-0 synthetic monofilament absorbable suture. There was no features suggestive of adherent placenta. Patient was transfused with 2 units of packed red cells. Post operative period was uneventful. There was no history suggestive of collagen disease in the

patient. Patient was subjected for genetic workup for Ehler-Danlos syndrome and was tested negative. She was further counselled about the risk of recurrent uterine rupture(22-100%)



Figure(a): CT abdomen and pelvis showing Fetus 1 and fetus 2 in the abdominal cavity with loss of myometrial architecture.

Figure (b): Uterine fundal rupture of about 6 cm length.

Discussion

Spontaneous rupture of uterus in a nulliparous woman before onset of labour in an unscarred uterus is very rare. Overall rupture uterus is estimated to occur 1 in 5700 to 1 in 20000 pregnancies. The most common site of rupture in an unscarred uterus is the fundus.[3]

Rare causes of uterine rupture in literature are adenomyosis, pelvic radiation, connective tissue disease and chronic steroid use. Eleven cases of uterine rupture in the second trimester of unscarred uterus were reported in which 5 cases had placenta percreta, 2 had myomectomy, 2 had uterine anomalies and 2 had no risk factor.[4,5,6]

Uterine perforation during operative hysteroscopy or even by uterine sounding has been associated with the possibility of uterine rupture.[7] In the current case, the patient had diagnostic hysteroscopy where no electrosurgical procedures were performed and there was no history of perforation. Hysteroscopy findings revealed normal endometrial cavity and endometrial biopsy was taken and sent for histopathology examination and TBPCR. The results were negative. The possibility of undiagnosed uterine perforation could be the cause for uterine rupture

The complications of a primary uterine rupture includes severe post-hemorrhagic anemia, puerperal infection, broad ligament hematoma, chance or an irreparable rupture requiring hysterectomy, damage to the bladder or bowel, perinatal mortality. Etc. [8] The cause of rupture in our case is not defined. One possibility could be inherited collagen disease Ehler- Danlos syndrome. [9] Our patient underwent genetic testing for the same and was negative.

Fang-Peng et al, 2007 reported a successful term delivery following spontaneous 2nd trimester uterine rupture and surgical repair. She had no apparent risk factors. The rent at the fundus was repaired without damaging the amniotic membrane at 26 weeks. Patient was put on tocolysis and delivered at 37 weeks by C-section, hence suggesting a conservative management as an alternative to hysterectomy.[10]

A case series by Aggarwal et al,2021 reported 3 different presentations of uterine rupture. One among them was a 21-year-old primigravida with breech presentation at a gestation of 34 weeks 6 days with preterm labour was taken up for LSCS and on entering the abdomen rupture uterus with an inverted T-shaped rent in the upper segment extending up to the fundus was seen. A stillborn male fetus was delivered through the rent, followed by successful uterine repair. Early diagnosis and timely intervention by the obstetrician, can help us to improve the fetal and maternal outcome drastically.[11]

Second trimester uterine rupture in unscarred uterus is very rare, but life threatening obstetrical emergency that should be considered as part of differential diagnosis for severe abdominal pain in early pregnancy. Rupture of scarred uterus have greater maternal morbidity, greater mean blood loss and higher rate of blood transfusion than rupture of a scarred uterus, renal failure, need for dialysis, life support. Etc. A risk of recurrent rupture is described upto 22-100% of cases mainly when it occurs at the fundus.[12] It is important to counsel patients who have not completed family.

Child birth after uterine rupture require great deal of attention. They carry a high risk of recurrent uterine rupture. Successful near-term deliveries have been reported with meticulous tertiary level antenatal care and planned operative delivery. [13]

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Conclusion

In conclusion, uterine rupture is a rare complication especially in nulliparous women before labour. However clinical suspicion, early diagnosis may represent the only possibilities to preserve maternal and fetal outcomes. The overall risk of uterine rupture associated with prior curettage is low but warrants consideration by obstetrician when clinical events raise concern for uterine rupture. We recommend clinicians to be aware of uterine rupture in pregnant women with pain abdomen with a history of uterine manipulation. [14,15] Due to rarity of its occurrence more evidence should be registered to increase the knowledge about this potentially lethal complication.

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