Case Report

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Spontaneous Rupture of the Gravid Uterus in a Multigravida Women with a Previous History of Caesarean Section: A Case Report

Radiology Section

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ABSTRACT

Spontaneous uterine rupture is a rare obstetric complication that has catastrophic effects on both the mother and foetus, resulting in significant morbidity and 80 to 90% foetal mortality. Rupture of the uterus through a previous lower uterine segment scar is the most common cause in developing nations. However, factors such as lack of antenatal care, inappropriate obstetric interventions, obstructed labour, grand multiparity, unbooked status, limited access to emergency obstetric care, and low socioeconomic status play a crucial role in uterine rupture in developing countries like India. Hereby, the authors present a case report of a 31-year-old pregnant patient at 19 weeks of gestation with sudden severe lower abdominal pain. An ultrasound revealed the absence of foetal cardiac activity, placenta located outside the uterus, an empty endometrial cavity, and minimal free fluid in the pelvis. Further, an Magnetic Resonance Imaging (MRI) of the pelvis showed a rupture of the anterior and right lateral uterine wall, through which the foetus and most of the placental tissue had passed into the peritoneal cavity. After confirming the diagnosis, the patient underwent emergency laparotomy, during which the uterine wall defect was closed with appropriate haemostasis. The patient recovered without any untoward complications.

Keywords: Antenatal care, Endometrial cavity, Free fluid, Placenta

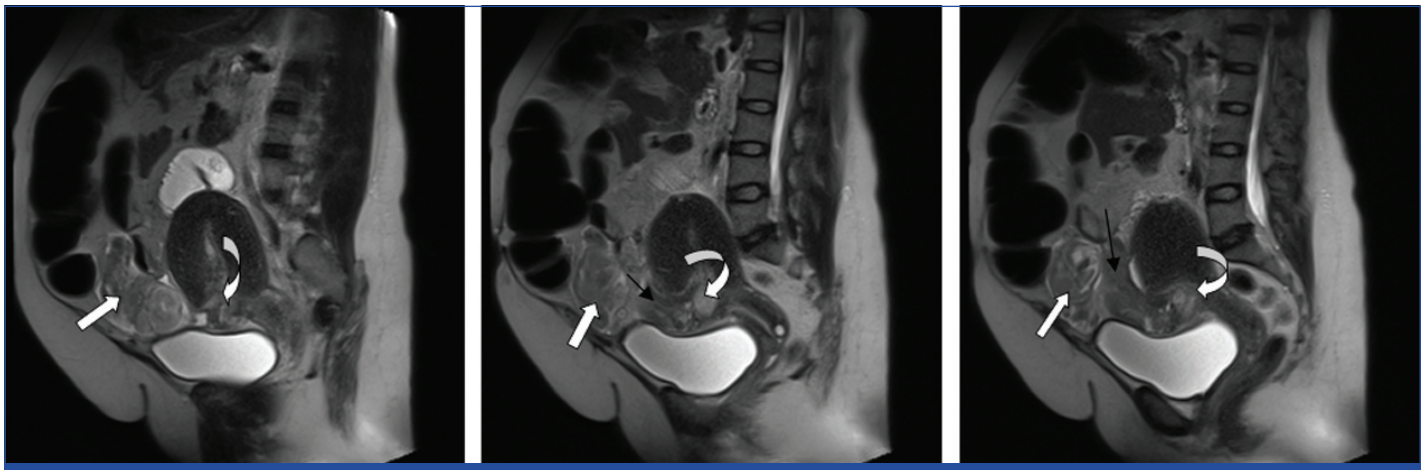
CASE REPORT

A 31-year-old female with a history of 19 weeks gestation has been brought for an ultrasound examination with a history of intolerable lower abdominal pain for the last 12 hours. No history of trauma or intake of medication was noted. She was 3rd gravida, para 2 live 2. No history of hypertension, diabetes, and no other co-morbidities. The previous two childbirths were done by caesarean section in a tertiary-level hospital. The patient underwent an ultrasound examination, which showed an absence of foetal cardiac activity, and the foetus was seen outside the uterus. The uterus is seen separately with no foetal parts within the endometrial cavity. The patient was subjected to an MRI abdomen, and the MRI abdomen showed a large defect measuring 3.9×2.6 cm {Transverse Caesarean Section (TRXCC)} in the lower uterine segment, mainly in the anterior and right lateral uterine wall. Through the uterine wall defect, part of the placenta is seen entering into the endometrial cavity. Most of the placental tissue and the entire foetus were seen outside the uterus, within the peritoneal cavity [Table/Fig-1-5]. Minimal free fluid is seen in the pouch of Douglas. No significant haemoperitoneum was noted, possibly due to the compressive effect of placental tissue on the defect. The foetus was seen just lying beneath the anterior abdominal wall. Emergency laparotomy was done, lower uterine segment uterine rupture was confirmed, and surgical repair of the defect was performed [Table/Fig-6,7]. The postoperative period was uneventful, and the patient was advised to follow-up after two weeks. The follow-up of patient was also uneventful.

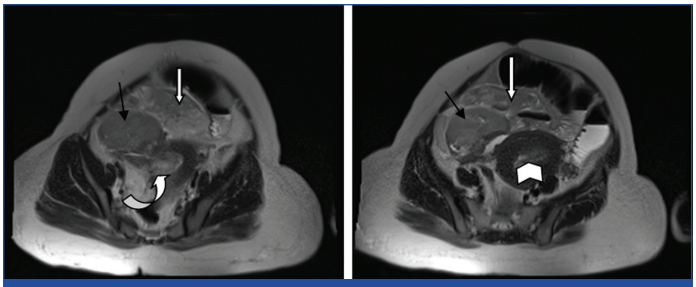
DISCUSSION

Uterine rupture in pregnancy is an infrequent occurrence with a high incidence of foetal and maternal morbidity and mortality. Uterine scarring from a previous caesarean section is the common risk factor, especially in developed nations [1]. Women over 30 years of age have been reported to have two to three times the risk of uterine rupture compared to women who are younger than 30 years [2]. Other reported risk factors for rupture of an unscarred uterus include any uterine anomalies, grand multiparity, cephalopelvic disproportion, uterine trauma, and the use of uterotonic drugs [3-5].

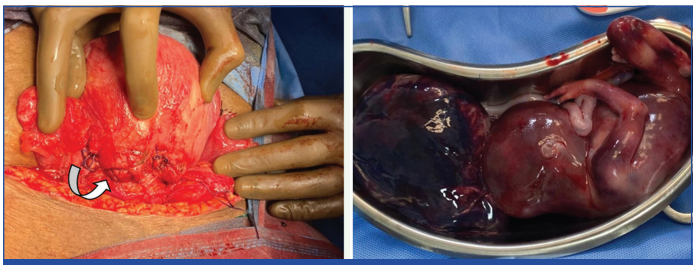
Among women with uterine rupture, 64% of cases had undergone prior Caesarean Section (CS) or had a uterine scar in developing countries [4]. The incidence of uterine rupture among women with



[Table/Fig-1-3]: (T2 W Sag) Images show defect in the lower uterine segment (curved arrow), presence of foetus (solid white arrow) and placenta (thin black arrow) within the peritoneal cavity. (Images from left to right)



[Table/Fig-4,5]: Axial T2 W images of lower abdomen showing the defect in the uterine wall(curved arrow), presence of placenta (thin black arrow) and foetus (bold white arrow) within the peritoneal cavity and empty endometrial cavity (Arrow head). (Images from left to right)



[Table/Fig-6]: Sutured uterine wall defect (curved arrow). **[Table/Fig-7]:** Shows placenta and dead foetus in a kidney tray. (Images from left to right)

prior CS was 1.69% in India [6]. Despite being less prevalent, uterine rupture accounts for about 5% of maternal deaths in the United States [7]. The risks of maternal haemorrhage requiring transfusion and hysterectomy are lower with a scarred uterine rupture compared to an unscarred uterine rupture [8]. Perinatal mortality rates in developing countries range from 74% to 92% [1], whereas in developed nations, perinatal mortality rates range from 8.7% to 11.7% [8,9]. Andonovová V et al., concluded that the overall prevalence of uterine rupture during pregnancy and delivery was 0.04%, in women with previous caesarean sections it was 0.2%, and in women with an unscarred uterus, it was 0.08% [5]. In the study by Marwah S et al., most of the women were multigravida (96.72%), and the incidence of ruptured uterus was found to be 0.1% [10]. In the present study, only one patient had antepartum rupture of the gravid uterus at 18 weeks of gestation, and that patient had a history of two previous Lower Segment Caesarean Sections (LSCS) [10]. Despite being an uncommon obstetric occurrence, most uterine ruptures occur during intrapartum, with the occurrence of uterine rupture during antepartum being extremely rare [11]. Other than the previous caesarean section, no other risk factor was associated with this patient. Ultrasound can report signs of uterine rupture, including identification of the protruding portion of the amniotic sac, endometrial or myometrial defect, intraperitoneal foetal parts, extrauterine haematoma, haemoperitoneum, or free fluid. Multiplanar Magnetic Resonance Imaging (MRI) provides a comprehensive assessment of the uterine wall and peritoneal cavity, with MRI abdomen being the investigative method of choice, which can depict the tear in the myometrium, the presence of foetal parts and the amniotic sac in the peritoneal cavity, and an empty endometrium in cases of complete expulsion of the foetus and placenta into the endometrial cavity [11], as observed in the present case. There was no significant haemoperitoneum or shock in this patient due to the presence of part of the placenta in the uterine defect, which restricted the amount of bleeding due to the pressure effect on the uterine tear site. The patient underwent emergency laparotomy, and the uterine defect was successfully repaired without any complications. The presence of peritoneal free fluid in the abdominal ultrasound, along with a history of lower abdominal pain, should raise suspicion of rupture. The differential diagnosis of uterine rupture includes uterine dehiscence. Uterine dehiscence is a gradual process of thinning and rupture of the uterine myometrium while the amniotic membrane remains intact. It usually occurs at the site of the caesarean section scar and is referred to as incisional dehiscence. Generally, uterine dehiscence is clinically occult, and the outcome for the mother and foetus is relatively good. Both preterm delivery and lack of progress in labour were identified as risk factors for uterine scar dehiscence. Parity was also found to have a protective effect against uterine dehiscence [12].

CONCLUSION(S)

The occurrence of uterine rupture is a rare complication that mostly happens during intrapartum and is associated with a history of previous LSCS. Early suspicion and detection of uterine rupture are important to reduce the morbidity and mortality of both the mother and foetus.

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