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Case Report

Spontaneous fundal uterine rupture in a scarred uterus sparing caesarean scar

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Abstract

Uterine rupture is a rare but severe obstetric emergency, often associated with previous uterine surgeries such as cesarean section or myomectomy. However, spontaneous rupture at an unscarred or remote uterine site is even rarer and often unpredictable. This condition poses a significant threat to both maternal and fetal well-being, requiring prompt diagnosis and surgical management. We report the case of a 26-year-old gravida 5, para 3 woman at 38 weeks and 4 days gestation who presented with bleeding per vaginum and absent fetal movements after undergoing a trial of labor after cesarean (TOLAC) at a peripheral center. On laparotomy, a 6 x 3 cm rupture was identified at the fundoposterior wall of the uterus, with the previous lower segment cesarean scar found intact. The fetus and placenta were extruded into the abdominal cavity. The uterus was repaired, and bilateral tubal ligation was performed. The patient recovered uneventfully postoperatively and was discharged on the fifth day.

This case highlights the potential for uterine rupture to occur at non-scarred sites, possibly due to unrecognized prior uterine trauma such as silent perforation. TOLAC should be conducted with caution, ideally in well-equipped centers with surgical and transfusion capabilities. High clinical suspicion, early diagnosis, and prompt intervention are essential to minimize maternal morbidity and mortality in such rare presentations.

Keywords: Uterine rupture, TOLAC, Fundal rupture, Intact scar, Obstetric emergency, Maternal morbidity, Silent uterine perforation.

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1. Introduction

Uterine rupture is a rare but serious and preventable obstetric emergency associated with high maternal and fetal morbidity and mortality. It is defined as a complete dehiscence of the uterine wall, including the myometrium and serosa. The incidence of uterine rupture varies depending on the presence or absence of a previous cesarean scar. In scarred uteri, it is more common and often occurs at the site of the previous incision. The reported perinatal mortality ranges from 80% to 95%.[1]

While the majority of cases are associated with previous uterine surgeries such as cesarean section or myomectomy, rupture can also occur in an unscarred uterus due to factors such as trauma, uterine anomalies, injudicious use of uterotonic agents during labour, obstructed labor, and grand multiparity.[2] Rarely, uterine rupture can be seen in scarred uteri in locations other than the previous scar, as in our case.

2. Case Report

A 26-year-old woman, gravida 5 para 3 living 2 abortion 1 (G5P3L2A1), presented to the emergency department at 38 weeks and 4 days of gestation with complaints of vaginal bleeding and absent fetal movements for the past six hours. She had undergone a trial of labor after cesarean (TOLAC) at a peripheral center for 12 hours, but specific details were not available. Her obstetric history included two previous normal vaginal deliveries five and four years ago, one lower segment cesarean section (LSCS) performed one year ago for placenta previa, and one spontaneous abortion at 12 weeks gestation three years ago managed with dilation and evacuation (D&E).

On general physical examination, the patient appeared pale and was in respiratory distress with a pulse rate of 130 bpm (thready) and blood pressure of 80/60 mmHg. On abdominal examination, the uterus was tense and tender, fetal parts were superficially palpable, and the fetal heart rate was

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absent. Speculum examination showed minimal bleeding. On vaginal examination, the cervix was 3 cm dilated and partially effaced with the presenting part high up.

Initial resuscitation included placement of wide-bore intravenous cannulas, fluid resuscitation, blood cross-matching, and urine catheterization, which yielded only 30 ml of clear urine. The patient was immediately taken to the operating room for an emergency exploratory laparotomy. Pre-operative investigations revealed haemoglobin of 5.8 g/dL and creatinine of 1.2 mg/dL.

Intraoperatively, approximately 1000 ml of hemoperitoneum was noted. The placenta was found lying in the pelvic cavity, and an intrauterine demise (IUD) male fetus was located in the peritoneal cavity. Upon exteriorization of the uterus, a 6x3 cm rupture was observed in the fundo-posterior region near the right cornu with myometrial thinning, while the previous cesarean scar was intact.(**Figure 1**) The rupture site was repaired in two layers, and bilateral tubal ligation was performed. An intraperitoneal drain was placed, and the abdomen was closed in layers. The patient received blood transfusions intraoperatively and postoperatively. She had an uneventful postoperative course and was discharged on the fifth postoperative day in satisfactory condition.

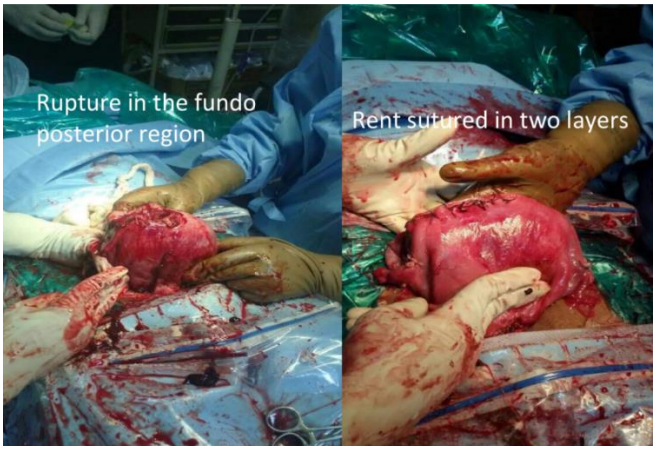

Figure 1: Intraoperative photograph showing rupture in the fundoposterior region with intact scar

3. Discussion

Spontaneous rupture of the uterus, particularly in an unscarred region or in an area other than a previous surgical scar, is a rare but critical condition that demands urgent recognition and prompt management. Such ruptures are typically unpredictable and may be misdiagnosed or missed until surgical exploration is performed.[3]

While most ruptures are associated with previous cesarean scars, there are multiple reports of rupture in unscarred or differently scarred uteri. Kiseli et al. described a case of mid-trimester rupture in a patient with a history of laparoscopic myomectomy, suggesting that increased intrauterine pressure may precipitate rupture even in the absence of a low transverse cesarean scar.[2] Similarly, Ofir et al. compared rupture in scarred versus unscarred uteri, highlighting that the location and pattern of rupture can differ significantly based on the underlying risk factors.[3]

In our case, the rupture occurred at the fundoposterior wall of the uterus, distant from the previous cesarean scar, suggesting that the site of a prior D&E may have caused a subclinical perforation or weakening of the myometrium. This hypothesis is supported by the presence of a thin uterine wall in that region at the time of surgery. While rupture at term with sparing of a cesarean scar is exceedingly rare, cases like this emphasize the need for a high index of suspicion, especially in patients with any prior uterine instrumentation.

Several studies have identified risk factors for uterine rupture, including multiparity, obstructed labor, use of prostaglandins or oxytocin, uterine anomalies, and previous uterine trauma.[4,5] However, many cases may still occur without identifiable risk factors, reinforcing the importance of vigilance in monitoring labor progress and timely referral from peripheral centers.

Sun et al. described a third-trimester rupture following prior hysteroscopic surgery, suggesting that deep resection and electrosurgical injury can thermally weaken the myometrium and predispose to rupture.[6]

Kaba M et al reported a similar case of fundal uterine rupture in a patient with history of 2 previous caesarean sections, cause of uterine rupure in this case was attributed to preterm labour and placental abruption, however, exact cause could not be ascertained.[7]

Assesment of Lower uterine segment thickness at term may be done via ultrasound before attempting trial of labour after caesarean. There is no consensus about LUS thickness at which TOLAC should be offered. While studies have found a higher risk of scar rupture in cases with LUS thickness less than 3.5mm,[8] there are others which have found increased risk at less than 2.5-3mm.[9]

Management of uterine rupture depends on the patient's hemodynamic status, extent of rupture, and future fertility wishes. In stable patients with controllable bleeding, uterine repair may be attempted. In cases of uncontrolled hemorrhage or hemodynamic instability, hysterectomy may be necessary. In recent years, the use of interventional radiology techniques like uterine artery embolization have shown promise in managing bleeding and preserving the uterus, especially when implemented promptly.

Our patient was hemodynamically unstable at presentation, but bleeding was controlled surgically. The uterus was conserved, and she underwent bilateral tubal ligation as she had completed her family.

4. Conclusion

This case report highlights the potential for uterine rupture to occur in locations other than previous cesarean scars, especially in patients with prior uterine procedures. Obstetric care providers must remain vigilant for atypical presentations of uterine rupture, particularly during TOLAC. Early recognition, prompt surgical intervention, and availability of blood products are crucial for favorable outcomes. Comprehensive antenatal counseling and timely referral from peripheral centers are essential to minimize maternal and fetal morbidity and mortality.

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6. Conflict of Interest

None.

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