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Case Report

Second-trimester uterine rupture in a scarred uterus presenting as an acute abdomen: a diagnostic challenge

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ABSTRACT

Uterine rupture is an uncommon but potentially catastrophic obstetric emergency, most often seen during labour in women with a scarred uterus. Rupture occurring in the second trimester, before the onset of labour, is far less common and can be mistaken for a surgical acute abdomen. We describe a 29-year-old woman, gravida 4 para 1, with a history of one previous cesarean section and two earlier uterine evacuations, who presented at 23 weeks of gestation with severe, diffuse abdominal pain and an episode of syncope. Ultrasonography on admission, together with medical and surgical assessment, did not establish a cause, and she subsequently deteriorated, with hypotension, tachycardia, and a sharp fall in haemoglobin. Repeat ultrasonography and an ultrasound-guided abdominal tap demonstrated haemoperitoneum, and emergency laparotomy revealed rupture along the previous cesarean scar together with a defect in the right broad ligament. The uterus was repaired and preserved successfully. This case highlights the need to consider uterine rupture in a woman with a scarred uterus presenting with acute abdomen, even before the third trimester and in the absence of labour.

Keywords: Uterine rupture, Scarred uterus, Second trimester, Acute abdomen, Cesarean section

INTRODUCTION

Uterine rupture refers to a full-thickness breach through all three layers of the uterine wall. Previous cesarean delivery is the most important predisposing factor, and prior myomectomy, high parity, malpresentation, and instrumental delivery also increase the risk.¹ Among women who undergo a trial of labour after a single previous low-transverse cesarean, the risk of rupture is estimated at 0.5-0.9%; rupture in the second or third trimester without labour is considerably rarer.¹ Because the presence of free fluid on ultrasound alongside an intrauterine pregnancy does not exclude rupture, failure to consider this diagnosis when evaluating acute abdominal pain may delay definitive management.¹ We describe a woman who developed second-trimester rupture of a scarred uterus that was initially investigated as a non-obstetric acute abdomen.

CASE REPORT

A 29-year-old woman, gravida 4 para 1, with a history of one previous lower-segment cesarean section and two earlier uterine evacuations for incomplete abortion, presented at 23 weeks of gestation. She reported a two-day history of severe, generalized abdominal pain and had experienced an episode of syncope one hour before arrival. There was no history of vaginal bleeding, vomiting, or trauma.

On examination, she was pale, with a pulse rate of 150 beats/minute, blood pressure of 120/56 mmHg, and respiratory rate of 28 breaths/minute. Her abdomen was distended, with guarding and rigidity; uterine size corresponded to approximately 20 weeks, and fetal parts and heart sounds could not be identified. Over the following 24 hours, her haemoglobin fell from 8.2 to 5

g/dL, while her leukocyte count rose from 15,000 to 41,000/ μ L. Ultrasonography demonstrated free fluid in the hepatorenal pouch and pelvis, without evidence of an inflamed appendix; renal and pancreatic biochemistry were unremarkable.

Both medical and surgical teams reviewed her and found no features establishing a surgical acute abdomen. As she developed progressive hypotension, tachycardia, and tachypnoea, she was transferred to the intensive care unit, where she received blood transfusion, was started on continuous positive airway pressure, and was catheterised. Repeat ultrasonography showed gross free fluid in the paracolic gutters and pouch of Douglas, and an ultrasound-guided abdominal tap confirmed haemoperitoneum. She was taken for emergency exploratory laparotomy for presumed uterine rupture with haemoperitoneum.



Figure 1: Rent in the uterus identified on opening the abdomen.

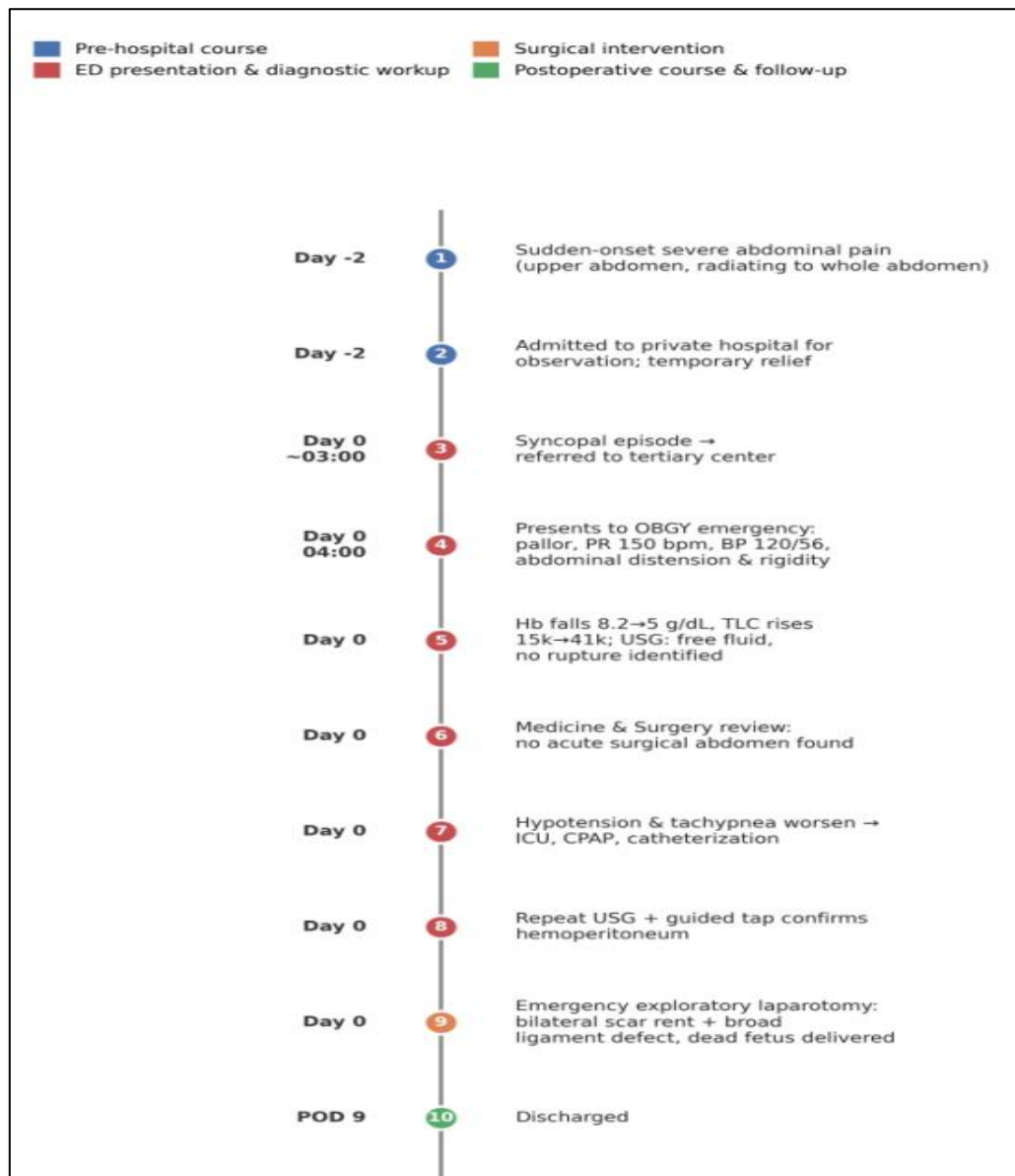


Figure 2: Clinical timeline of second-trimester uterine rupture in a scarred uterus presenting as acute abdomen.

At operation, approximately two litres of haemoperitoneum and 650 g of clot were evacuated. The lower uterine segment had failed to form properly, and rupture was found along the previous cesarean scar at two sites, each measuring 2×2 cm, together with a 1×2 cm defect in the right broad ligament (Figure 1). A fetus without signs of life was delivered, with a grossly normal placenta. The uterus was repaired, with bilateral ligation of the uterine and ovarian arteries; total blood loss was estimated at 4 litres. She received a total of six units of whole blood/packed red cells and two units of fresh frozen plasma during the perioperative and postoperative periods and was discharged on postoperative day 9.

DISCUSSION

Uterine rupture is thought to complicate roughly one in every 5,000-7,000 births overall; this risk rises to around 1% after a single previous cesarean and to 3.9% after more than one, while rupture of an unscarred uterus is rare, occurring in only about 1 in 10,000-25,000 deliveries.¹ In our patient, risk was further increased by the combination of a previous cesarean section and two subsequent uterine evacuations, either of which may have weakened the myometrium beyond the original scar itself.

Comparable cases have been reported elsewhere. Bharatnur and colleagues described a 30-year-old woman with one previous cesarean who presented in shock at 19 weeks with an acute abdomen due to scar rupture, in whom the fetus remained intact despite complete separation of the placenta.² Psarris and colleagues reported an incomplete rupture at 18 weeks in a woman with a prior cesarean that was managed conservatively, with the pregnancy continuing to 37 weeks—a notable contrast to the complete rupture and immediate delivery seen in our patient.³ Fahrni and colleagues documented rupture recurring at the fundus, away from the original scar, suggesting that the whole uterine wall may become vulnerable once it has previously been compromised.⁴ Ronen and colleagues, and separately Munshi and colleagues, each reported rupture without a typical scar-related risk factor—in the setting of placenta accreta spectrum and an unscarred uterus, respectively—reinforcing that rupture should remain a differential diagnosis for acute abdomen in pregnancy regardless of scar status.^{5,6}

The central lesson of this case is the delay in diagnosis despite several points of clinical contact-observation at a private hospital, presentation to the emergency department, and review by both medical and surgical specialists—compounded by an initial ultrasound that failed to detect the rupture. Because bleeding in uterine rupture is usually intra-abdominal and can occur without external bleeding, this most likely contributed to the delay. The absence of labour and the atypical presentation further departed from the classical picture, placing this case

among the rarer group of antepartum, non-labour ruptures described above.

Definitive management is emergency laparotomy with delivery and correction of haemodynamic instability; hysterectomy may be required in women with rupture. In this patient, despite a bilateral scar tear extending into the broad ligament, the uterus was successfully conserved.

CONCLUSION

Uterine rupture should remain in the differential diagnosis of acute abdomen at any gestational age in a woman with a scarred uterus, even in the second trimester, outside labour, and when initial multidisciplinary assessment and ultrasonography are inconclusive. A high index of suspicion, together with prompt repeat imaging and timely surgical exploration when clinical deterioration suggests intra-abdominal bleeding, is essential to prevent potentially fatal delay.

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