Spontaneous Rupture of an Unscarred Uterus Diagnosed Postpartum: A Case Report

Olga Haakman, MD,[1] Devon Ambrose, MD, FRCSC,[1] Christina Katopodis, MD, FRCSC,[1] Alon D. Altman, MD, FRCSC[1,2]

[1]Department of Obstetrics, Gynecology and Reproductive Sciences, University of Manitoba, Winnipeg MB

[2]Division of Gynecologic Oncology, University of Manitoba, Winnipeg MB

Abstract

Background: Uterine rupture is a tear in the uterine wall involving its full thickness, resulting in the formation of a defect in the uterine wall. The major risk factor is the presence of uterine scarring (specifically from Caesarean section), but it can also occur in an unscarred uterus. Although rare, this has been shown to result in more severe complications.

Case: A 31-year-old woman, gravida 6 para 6, without prior uterine incision or manipulation developed significant postpartum bleeding. She was found to have a uterine rupture with retroperitoneal extension, and surgical management was required.

Conclusion: Early diagnosis of uterine rupture with rapid initiation of supportive and surgical care may significantly improve prognosis. It is imperative to consider uterine rupture in any obstetrical patient with hemodynamic instability or hemorrhage, regardless of whether risk factors (including a previous uterine scar) are present.

Résumé

Contexte : La rupture utérine est une fissure affectant la pleine épaisseur de la paroi utérine qui entraîne la formation d'une anomalie dans cette dernière. Bien que la présence de cicatrices utérines (particulièrement celles qui sont attribuables à la césarienne) en constitue le facteur de risque majeur, une rupture utérine peut également se manifester dans le cas d'un utérus exempt de cicatrices. Il a été démontré qu'une telle rupture utérine, quoique rare, donnait lieu à des complications aggravées.

Cas : Une femme de 31 ans, gravida 6 para 6, sans antécédents d'incision ou de manipulation utérine en est venue à connaître des saignements importants pendant la période postpartum. Une rupture utérine présentant une extension rétropéritonéale a été constatée et la mise en œuvre d'une prise en charge chirurgicale s'est avérée nécessaire.

Conclusion : Le diagnostic précoce d'une rupture utérine suivi de la mise en œuvre rapide de soins de soutien et chirurgicaux pourrait améliorer le pronostic de façon significative. Il est impératif d'envisager la possibilité d'une rupture utérine chez toute patiente obstétricale présentant une instabilité hémodynamique ou une hémorragie, peu importe si des facteurs de risque (y compris la présence préalable d'une cicatrice utérine) sont présents ou non.

Key Words: Uterine rupture, Caesarean section, postpartum period, postpartum hemorrhage, hysterectomy

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INTRODUCTION

Uterine rupture is a rare obstetrical complication which is severe and life threatening. It is characterized by a tear in the uterine wall involving its full thickness, including the serosa.[1–5] Reported median incidence is 5.3 per 10 000 total births.[1,5,6] Uterine rupture has been closely associated with the presence of uterine scarring, with 90% of ruptures occurring in a previously scarred uterus, usually following Caesarean section.[1,4,6–11] The estimated incidence of uterine rupture in women without a history of Caesarean section in the developed world is 0.006% based on a World Health Organization systematic review,[1] while 1% of women with a previous Caesarean section developed uterine rupture.[9] Rupture of a uterus without prior scarring has been described as significantly more severe than rupture of a scarred uterus, with higher rates of maternal and fetal morbidity.[6,8]

Characteristic signs and symptoms of uterine rupture include abdominal pain of a tearing quality, abnormal fetal heart rate, vaginal bleeding, sudden loss of contractions, and loss of the presenting part.[3–6,12–14] These signs are not always present, and the presentation of uterine rupture is often non-specific.[3–5,13] Maternal morbidity is significant, with high rates of severe hemorrhage requiring blood transfusion, of injury to the bladder and other organs, and

with frequent need for hysterectomy. Early diagnosis and intervention including aggressive fluid replacement, blood transfusion, and surgical intervention will significantly affect the prognosis.[5]

THE CASE

A 31-year-old woman, gravida 6, para 5, presented at 36 + 5 weeks' gestation to the labour and delivery unit for induction of labour. She had had spontaneous premature rupture of membranes with passage of lightly meconium-stained amniotic fluid four hours before admission, and had irregular, infrequent uterine contractions. Her pregnancy was complicated by diet-controlled gestational diabetes mellitus and essential hypertension not requiring medication. She had received regular prenatal care. Her obstetrical history included five previous uncomplicated spontaneous vaginal deliveries at term. The patient's medical history was otherwise not significant, and she had no history of abdominal surgery. There had been no vaginal bleeding and she reported normal fetal movement. The fetal heart rate tracing at presentation and throughout labour was reassuring. Vital signs were normal and stable, with a blood pressure of 147/80. Her initial hemoglobin concentration was 91 g/L. Pelvic examination showed a cephalic presentation at station −2, with the cervix 3 cm dilated and 50% effaced.

Induction of labour with low dose oxytocin was begun and the infusion was increased to 10 mU/minute, resulting in regular uterine contractions. The patient subsequently developed bradycardia; electrocardiography showed sinus bradycardia, and glycopyrrolate was administered.

The patient progressed uneventfully to full cervical dilatation, and had a precipitous spontaneous vaginal delivery 12 hours after admission. The baby was female, weighed 2783 g, and had Apgar scores of 4 and 8 at one and five minutes, respectively. The placenta was delivered spontaneously and was intact. Estimated blood loss at delivery was 500 mL. The patient received oxytocin 40 U in 1000 mL intravenously, and because she was a grand multipara she received an additional 200 μg of misoprostol sublingually and 600 μg per rectum as prophylaxis against postpartum hemorrhage.

Immediately after delivery, she had heavy vaginal bleeding with estimated blood loss of 1000 mL. On examination, the uterine fundus was 5 cm above the umbilicus and was boggy. Initial management included further intravenous infusion of oxytocin and manual removal of clots from the uterus. The patient also received ergometrine and carboprost, and the uterus contracted satisfactorily. Repeat hemoglobin concentration was 47 g/L; a second intravenous line was established and two units of packed red blood cells were transfused.

Vaginal bleeding continued despite medical treatment, and vaginal examination under anesthesia was performed. A large bleeding cervical laceration was identified and repaired with polyglactin 910 suture. A uterine compression balloon was placed and inflated with 300 mL of sterile water. No further source of bleeding was identified. A gauze pack was placed in the vagina and a Foley catheter was inserted into the bladder. On abdominal examination, the uterus was found to be firm and at the level of the umbilicus. The patient's condition was stable and she was transfused two additional units of packed red blood cells.

When the patient continued to have persistent vaginal bleeding, with a falling hemoglobin concentration, possible uterine rupture was suspected; accordingly, it was elected to perform an exploratory laparotomy. On entry into the peritoneal cavity, a large (500 mL) retroperitoneal hematoma was identified. This was stable and not expanding. The gynaecologic oncology service was consulted intraoperatively, and the decision was made to provide conservative management with close monitoring of hemoglobin and coagulation indices and to undertake uterine artery embolization if necessary. The patient received a further three units of packed red cells, one litre of fresh frozen plasma, and one adult dose of platelets intraoperatively. Following the procedure her condition was stable and she remained intubated during further close monitoring.

Following the laparotomy, minimal vaginal bleeding was observed and the uterus remained contracted. Her hemoglobin concentration, however, continued to decrease despite ongoing transfusion, and the patient underwent a second emergency laparotomy. The large broad ligament hematoma was again noted to be extending into the retroperitoneum and the right paracolic gutter. The source of retroperitoneal bleeding was identified as a 6 cm spontaneous rupture in the right lateral cervix and lower uterine segment extending into the vagina (Figure 1). In addition, what appeared to be free amniotic fluid was observed in the left retroperitoneal space (Figure 2). A total abdominal hysterectomy and bilateral salpingectomy was performed. The total estimated blood loss was 2500 mL. The patient's condition was stable postoperatively and she was transferred to the step-down unit for further monitoring.

Her immediate postoperative hemoglobin concentration was 86 g/L; on the first postoperative day it had fallen