

Spontaneous Uterine Rupture Following Vaginal Delivery in an Unscarred Uterus: A Rare and Life-Threatening Complication

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Abstract

Case Report

Uterine rupture is a rare but potentially fatal obstetric emergency, most commonly associated with previous uterine surgery. Spontaneous rupture in an unscarred uterus is extremely uncommon, particularly in the postpartum period. We report a case of a 36-year-old multiparous woman who presented with postpartum hemorrhage and abdominal pain eight hours after a spontaneous vaginal delivery. Imaging revealed a uterine wall defect with a large pelvic hematoma. Emergency surgery confirmed a 3 cm anterior uterine rupture and retroperitoneal hematoma, necessitating subtotal hysterectomy. The objective of this report is to illustrate the pivotal role of imaging in the unexpected diagnosis of uterine rupture in a postpartum patient with severe hemorrhage, despite the absence of prior uterine scarring. This case aims to highlight the imaging findings that enabled timely recognition of this rare complication and guided appropriate clinical management.

Keywords: Uterine Rupture, Unscarred Uterus, Postpartum Hemorrhage, Subtotal Hysterectomy, Pelvic Hematoma, Obstetric Emergency.

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INTRODUCTION

Uterine rupture is a catastrophic obstetric complication, typically linked to prior cesarean sections or uterine surgeries. Its incidence in unscarred uteri is extremely rare, estimated at 0.006% in developed countries [1]. Spontaneous rupture in the postpartum period, particularly in the absence of labor induction or trauma [2], is even more exceptional and often unanticipated. The clinical presentation is nonspecific, which contributes to diagnostic delays and worsens maternal outcomes.

CASE REPORT

A 36-year-old woman, gravida 3 para 3, with a history of three spontaneous vaginal deliveries, presented to the emergency department eight hours after her most recent delivery. The delivery had been uneventful and vaginal, at term, without instrumental assistance or uterotonic misuse.

She reported progressive diffuse abdominal pain and vaginal bleeding since delivery. On examination, she was pale, tachycardic (heart rate 112

bpm), normotensive (BP 110/70 mmHg), and had diffuse abdominal tenderness without peritoneal signs.

Initial blood work showed hemoglobin at 8.3 g/dL and hematocrit at 26.4%. Two hours later, control labs revealed further drop in hemoglobin to 7 g/dL and hematocrit to 21.4%.

Pelvic ultrasound demonstrated a 9 mm defect in the anterior uterine wall, with a large periuterine pelvic hematoma and echogenic peritoneal fluid suggesting hemoperitoneum (figure 1). A non-contrast pelvic CT scan confirmed the anterior wall rupture and extensive hematoma tracking into the vesicouterine pouch, broad ligament, and retroperitoneal space (figure 2).

The patient was transferred emergently to the operating room. Intraoperative findings revealed a 3 cm rupture in the lower uterine segment extending into the vesicouterine space, with a broad ligament hematoma spreading retroperitoneally. Due to uncontrollable bleeding, a subtotal hysterectomy was performed with preservation of the right ovary. She received two units of

packed red blood cells and three units of fresh frozen plasma intraoperatively.

Postoperative evolution was favorable, with gradual improvement in clinical and biological parameters.

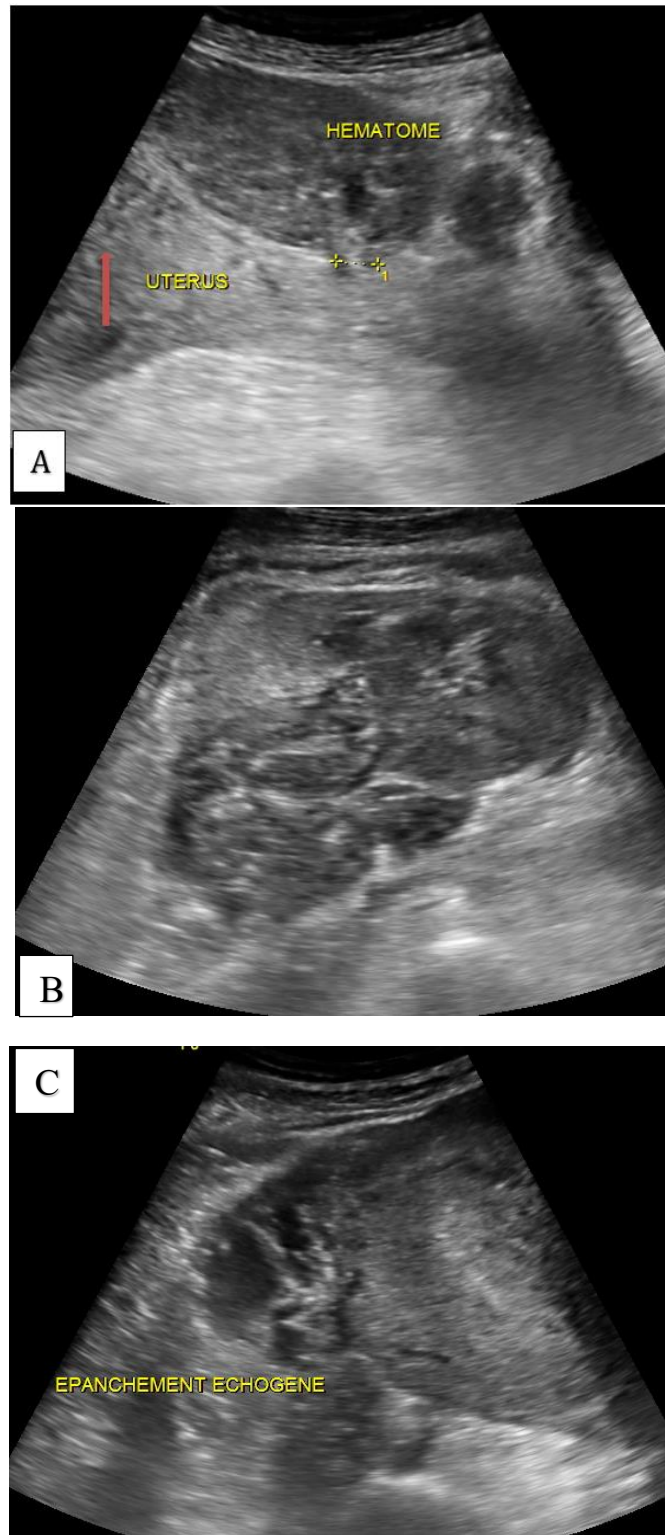


Figure 1: Pelvic ultrasound showing a 9 mm defect (arrow) in the anterior uterine wall (A), a large periuterine pelvic hematoma (B) and hemoperitoneum (C)

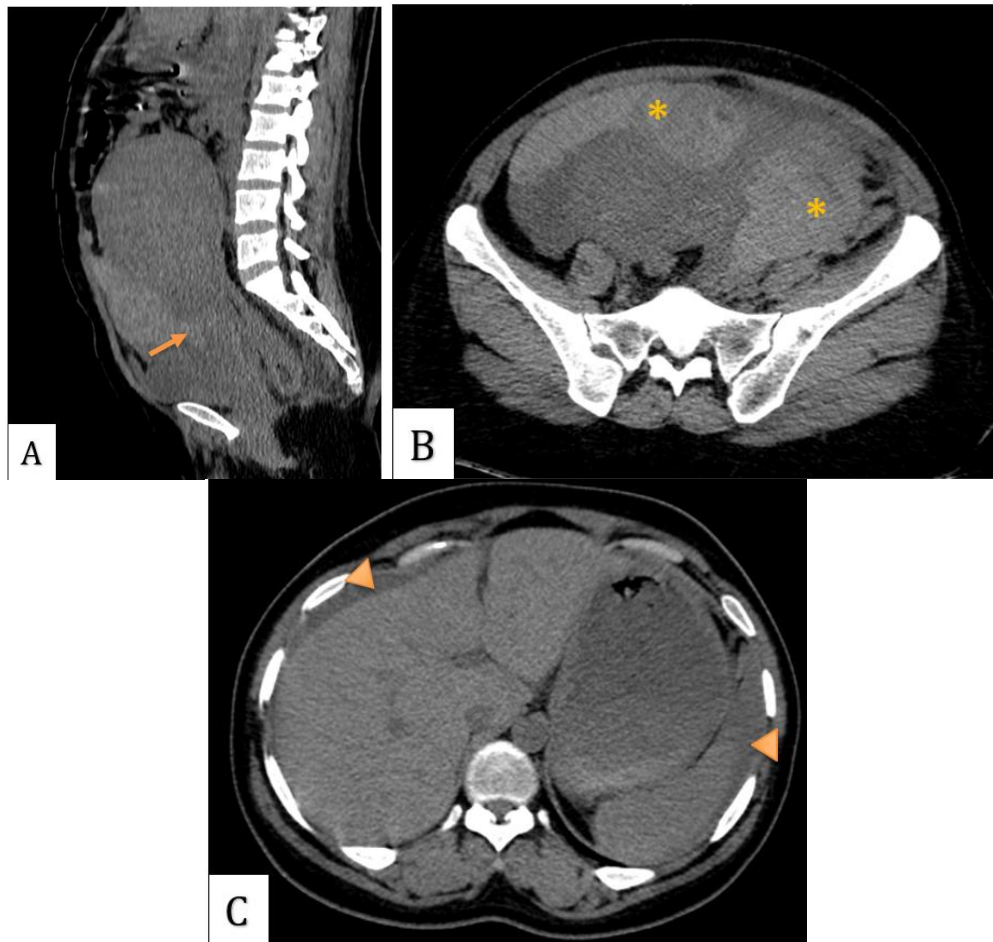


Figure 2: Non-contrast pelvic CT scan with sagittal and axial view showing the anterior wall rupture (A) (arrow), extensive hematoma (B) (asterix), and hemoperitoneum (C) (arrowhead)

DISCUSSION

Uterine rupture in an unscarred uterus remains one of the rarest and most dangerous complications in obstetrics. Most cases are associated with trauma, uterine overdistension, induction agents, or high parity. In this patient, none of these factors were present, and the rupture occurred in the postpartum period a time when uterine rupture is seldom suspected.

The clinical presentation in such cases is subtle and can mimic other postpartum conditions. Abdominal pain, pallor, and signs of hypovolemia are often the only indicators, and bleeding may not be immediately visible due to containment within the peritoneal or retroperitoneal spaces [3].

Ultrasound is a useful first-line tool for detecting uterine wall defects and hemoperitoneum [4]. When findings are inconclusive or when the clinical situation deteriorates, CT provides comprehensive visualization of the uterine wall, extra-uterine hemorrhage, and associated pelvic injuries with greater precision. In conjunction, these imaging techniques are essential for establishing an early and accurate diagnosis, guiding emergent management, and preventing severe maternal morbidity.

The cornerstone of management is rapid surgical intervention. In this case, subtotal hysterectomy was life-saving due to extensive tissue disruption and failure to achieve hemostasis through conservative measures. While uterine preservation is ideal, maternal survival remains the primary goal.

This case underlines that uterine rupture should not be excluded solely based on the absence of uterine scars or cesarean history, especially in multiparous women. Vigilance and prompt imaging are crucial in postpartum women presenting with abdominal pain and signs of hemodynamic compromise.

CONCLUSION

Spontaneous uterine rupture in an unscarred uterus during the postpartum period is an extremely rare but potentially fatal event. Clinicians must maintain a high index of suspicion in any postpartum woman with unexplained abdominal pain and bleeding. Timely diagnosis through imaging and prompt surgical management are critical to prevent maternal morbidity and mortality.

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