Spontaneous Uterine Rupture with Concurrent Uterine Vessel Rupture and Massive Hemoperitoneum Following Non-Operative Vaginal Delivery: A Rare Case Report

Natasha Vania, MA[1], Ritika Rao, MA[1], Nabiha Malik, MD[2], Erum Azhar, MD, MS PHS, MHQS, CPPS, FACOG[3,5], Laila Younes, MD, MHA[4,5]

[1] Arizona College of Osteopathic Medicine (AZCOM), Midwestern University [2] WellSpan Good Samaritan Hospital Family Medicine Residency Program, Lebanon, PA
[3] Dignity Health East Valley Obstetrics and Gynecology Residency Program, Gilbert, AZ [4] Department of Family Medicine, Dignity Health Medical Group, AZ
[5] Dignity Health East Valley Family Medicine Residency Program, Gilbert, AZ

OBJECTIVES

- Highlight the critical importance of early recognition and management of postpartum hemorrhage due to uterine rupture in patients without a history of uterine surgery.
- Enhance understanding of the diagnostic and therapeutic challenges associated with uterine rupture in an unscarred uterus, emphasizing the pivotal role of multidisciplinary care in optimizing maternal outcomes.

INTRODUCTION/BACKGROUND

- Postpartum hemorrhage (PPH) remains one of the leading causes of maternal morbidity and mortality worldwide, with early identification and timely intervention crucial for improving outcomes.
- One serious cause of PPH is a uterine rupture. Overall uterine rupture rates are 1 in 1,235-4,366, with primary uterine rupture estimated at around 1 in 16,840-19,7654 in developed nations. This can be a cause of life-threatening postpartum hemorrhage and typically occurs in the presence of prior uterine surgery.
- Its occurrence in an unscarred uterus presents unique diagnostic and therapeutic challenges.
- Management of uterine rupture often requires a multidisciplinary approach involving obstetricians, anesthesiologists, and surgical teams, particularly when facing complex complications such as uterine trauma or vascular injury.

CASE DESCRIPTION

- Patient was a G4P2012, 38W6d who presented with spontaneous rupture of membranes, which was augmented with oxytocin. She delivered a healthy baby boy but experienced PPH, initially managed with IM Methergine, Pitocin, Misoprostol, and uterine massage.
- The patient became light-headed and less responsive, with uterine atony and significant blood loss. Her hemoglobin dropped from 11.5 to 7.4, and her systolic blood pressure fell to the 30s. Norepinephrine was administered, and a rapid response team was called for a mass transfusion protocol, resulting in 18 units of PRBC, 12 units of FFP, three units of cryoprecipitate, and three units of platelets.
- The patient was taken for an emergent exploratory laparotomy, revealing a posterior uterine rupture involving the posterior venous plexus. A supracervical hysterectomy was performed, with general and vascular surgery called in to assist in controlling the venous avulsions.
- The patient was then transferred to another nearby medical center's interventional radiology team, where another laparotomy was performed to remove packing and address ongoing bleeding.
- Postoperatively, she developed an ileus and required an NG tube. The patient stabilized and was discharged on day seven.

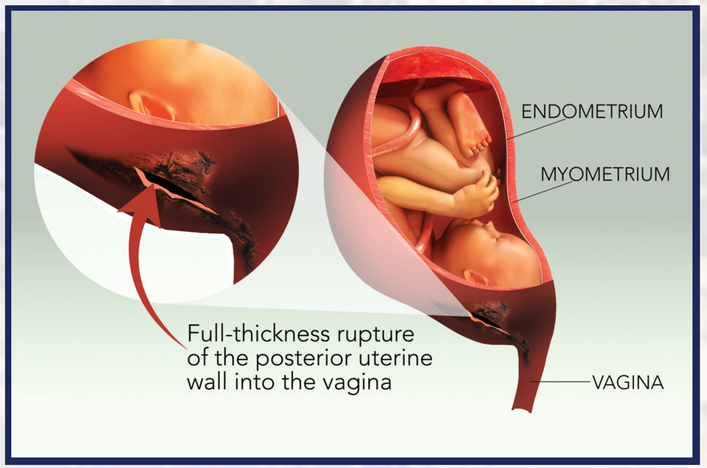

Figure 1. *Graphic representation of a posterior uterine rupture.*

DISCUSSION

- This case presents a rare and life-threatening postpartum hemorrhage due to posterior uterine wall rupture in a patient without prior uterine surgery. It emphasizes the need for early recognition and immediate intervention to optimize maternal outcomes.
- Identifying a somatic dysfunction and management during osteopathic principles and examining the abdominal tenderness and guarding provide additional clinical context when trying to differentiate diagnosis and treatment decision-making where the body needs external intervention.
- The primary work-up included imaging and laboratory tests to rule out other causes of postpartum hemorrhage, such as uterine atony, retained placenta, and cervical lacerations. Uterine rupture was confirmed through exploratory laparotomy after other potential diagnoses were excluded.

OUTCOMES/CONCLUSION

- Uterine rupture, though traditionally linked to prior uterine surgery, can also occur in an unscarred uterus, as demonstrated in this rare case.
- In the setting of postpartum hemorrhage complicated by pain and hemodynamic instability, uterine rupture should be considered in the differential diagnosis and managed with prompt, decisive intervention.

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