



# Spontaneous retroperitoneal bleed 24 hours postpartum: a case report

Luis Liu Perez, DO

From the Department of Medical Education, Firelands Regional Medical Center, Sandusky, OH.

## KEYWORDS:

Spontaneous;  
Postpartum;  
Rupture;  
Hemorrhage

**Summary** A 27-year-old Hispanic woman (G5 P4 004) presented to the labor and delivery unit at 38 weeks' and 6 days' gestation with onset of active labor. Approximately 24 hours postpartum, the patient had sudden onset of lightheadedness, hypotension, and labored breathing. After evaluation of the patient, including emergency exploratory laparotomy, it was found she had a massive retroperitoneal bleed secondary to spontaneous rupture of the uterine artery as well as rupture of multiple left adnexal veins. A MEDLINE search using the Keywords "postpartum" and "arterial rupture" yielded only 68 citations, 13 of which were specific for spontaneous rupture of a vessel. This is a rare complication of normal vaginal delivery that should be considered in the differential of any woman who has acute onset of hypotension 24 to 48 hours postpartum. Labor and delivery units as well as postpartum recovery units should be equipped to handle such rare but potentially fatal emergencies. This case report describes one such case at a community hospital and describes the outcomes of the case as well as recommendations to handle such emergencies.

© 2011 Elsevier Inc. All rights reserved.

Postpartum hemorrhage (PPH) is an important cause of morbidity and mortality in developed countries and internationally is a major cause of maternal mortality.<sup>1</sup> The actual incidence of PPH is difficult to determine because of the lack of standardized definitions of what constitutes hemorrhage in the immediate postpartum period; but according to one source, the incidence of PPH can range from 3% to 18% of all deliveries in the United States.<sup>1</sup> Globally, the incidence of PPH is reported to occur in 10.5% of live births, with a fatality rate of 1%.<sup>2</sup>

Lack of standardization in the definition of what constitutes PPH is a barrier to measuring the actual incidence of PPH. According to the American College of Obstetricians and Gynecologists (ACOG), normal blood loss at delivery for vaginal, cesarean, and repeat cesarean plus hysterectomy

are approximately 500 mL, 1000 mL, and 1500 mL, respectively.<sup>3</sup> Those values were derived from a study in 1962 published in *Obstetrics and Gynecology*.<sup>4</sup> Any blood loss beyond those standard values can be considered hemorrhage. In addition to the ACOG's definition of PPH, other definitions have been used; for example, a 10% change in hematocrit between admission and the postpartum period has been considered to be PPH.<sup>5</sup>

Given the previous definitions for PPH, it is possible that PPH is likely more prevalent than reported. The majority of reported cases are likely cases of PPH that resulted in bad outcomes or near catastrophic events that were prevented with appropriate medical or surgical interventions. Also, the fact that blood loss estimates are rather subjective, especially in cases of spontaneous vaginal delivery where lost blood is not collected in a graduated collection device, also contribute to the difficulty in accurately determining the true incidence of PPH in the population, regardless of outcome.

Although PPH is likely more prevalent than reported, it is more clinically important to determine whether an in-

Corresponding author: Luis Liu Perez, DO, Department of Medical Education, Firelands Regional Medical Center, 1912 Hayes Avenue, Sandusky, OH 44870.

E-mail address: LP131304@ohio.edu.

stance of PPH could lead to hemodynamic compromise. A study by Sheiner et al<sup>6</sup> determined that major risk factors for severe PPH were a retained placenta, failure to progress during the second stage of labor, hypertensive disorders, induction of labor, and instrumental deliveries. The patient in this case report had none of those risk factors with the exception of pitocin labor augmentation.

### Case summary

A 27-year-old Hispanic female (G5 P4 004) presented to the labor and delivery unit at 38 weeks' and 6 days' gestation with spontaneous onset of active labor. The patient had delivered all of her previous children by uncomplicated vaginal deliveries. Her prenatal history was unremarkable. The patient's medical history also was unremarkable. The patient did not use tobacco, alcohol, or recreational drugs.

The patient delivered a normal infant that same day without complications via spontaneous vaginal delivery. The estimated blood loss was 250 mL. No episiotomy was performed and no lacerations that needed repair were noted.

The day after delivery, while recovering in the postpartum unit, the patient complained of abdominal pain and was given routine analgesics for postpartum pain. The patient's pain, however, did not improve and worsened to the point that the patient was doubled over in pain. Soon after her onset of severe abdominal pain, she became severely hypotensive (blood pressure 68/48 mm Hg, pulse 106 bpm) and had a syncopal episode. The Medical Emergency Team (MET) was summoned for hemodynamic emergency. The MET aggressively treated the patient with fluid resuscitation and the surgery service was consulted emergently for the possibility of exploratory laparotomy. A computed tomography scan performed before the patient was taken to surgery showed a large, left-sided hematoma and active bleeding in the pelvis (Fig. 1).

An emergency laparotomy was performed, and a very large hematoma measuring approximately 20 cm in diameter and 30 cm in length was found upon entry into the abdominal cavity. After evaluation of the situation, a vascular surgeon was brought in to assist the case while the patient was still in surgery. After evacuation of the hematoma and ligation of all bleeding vessels, the final diagnosis was spontaneous rupture of the left uterine artery as well as rupture of left broad ligament veins. The patient received 12 units of blood. She recovered well and was discharged on the morning of the fourth postoperative day.

### Discussion

After reviewing textbooks and the literature, it appears that of all the major causes of late PPH, spontaneous vessel rupture, is the least recognized. The severity of a vessel rupture is clinically very significant, but the rarity of the event, particularly as a reason for late PPH, makes it easy to ignore during discussions on PPH.



**Figure 1** Computed tomography scan showing a massive hematoma and active bleeding.

A MEDLINE search using the Keywords "postpartum" and "arterial rupture" yielded only 68 citations; 13 of which were specific for spontaneous rupture of a vessel during the immediate postpartum period. Of the 13 citations; only six were cases of spontaneous rupture of the uterine artery. Of the six articles specific to spontaneous rupture of the uterine artery; two were in foreign language; leaving only four articles in English that dealt specifically with spontaneous postpartum rupture of the uterine artery.

The literature supports the argument of giving more importance to the possibility of spontaneous vessel rupture during the work-up of late PPH. Ginsberg et al reported 28 cases of spontaneous rupture of the uterine artery, similar in presentation to our case.<sup>7</sup> Of those 28 cases, six presented during the postpartum period. The high maternal mortality rate associated with this rare event has been reported to be 49%, but that percentage increases to 76.3% if the vessel rupture is associated with labor.<sup>8</sup>

In addition to the high rate of mortality that spontaneous vessel rupture carries, the fact that exploratory laparotomy for hematoma control is often the only option available to manage the emergency also adds to the possibility of high morbidity or mortality. Emergency laparotomies carry an element of increased risk over elective procedures that are carried out with less urgency. This increased risk is also influenced by the hospital facilities where the emergency occurs and the training and preparedness of the personnel involved in the management of the patient.

For all these reasons, a quick diagnosis of vessel rupture is critical. Recognition that uterine artery rupture can occur either during active labor or in the late postpartum period is essential, and medical professionals that care for the pregnant patient must always keep this complication in mind. Cases of late PPH

are more concerning, particularly because the baby has already been delivered, the mother is in the recovery room, and the stress of delivery is over. Those are the instances of PPH that could lead to more catastrophic outcomes for the mother, especially if the PPH happens while the mother has already been discharged home. Fortunately, our case report deals with a patient who had severe late PPH while still in the hospital. Spontaneous arterial rupture, as explained before, is a rare cause of PPH but should always be in the differential diagnosis of a patient who presents in the postpartum period with symptoms of hypotension, tachycardia, syncope, and severe abdominal or pelvic pain.

## Conclusion

It is essential that postpartum recovery areas have the proper equipment and trained personnel to quickly manage potentially deadly complications in the late postpartum period.

### CCME Resource: Osteopathic Family Physician offers 2 hours of 1-C CME

ACOFP members who read the Osteopathic Family Physician can receive two hours of Category 1-C continuing medical education credit for completing quizzes in the journal. Visit [acofp.org/resources/publications.aspx](http://acofp.org/resources/publications.aspx) to access the quizzes.

#### CME March/April 2011 Answers :

1.c, 2.d, 3.c, 4.d, 5.b, 6.a, 7.c, 8.a, 9.a, 10.b

## References

1. Ratcliffe, et al: *Family Medicine Obstetrics*, 3rd ed. Philadelphia: Mosby, 2008, pp 479-481
2. AbouZahr C: Global burden of maternal death and disability. *Br Med Bull* 67:1-11, 2003
3. ACOG educational bulletin. Postpartum hemorrhage. *Int J Gynaecol Obstet* 61:79-86, 1998
4. Pritchard JA, et al: Blood volume changes in pregnancy and the puerperium. *Am J Obstet Gynecol* 84:1271-1282, 1962
5. Combs CA, et al: Factors associated with postpartum hemorrhage with vaginal birth. *Obstet Gynecol* 77:69-76, 1991
6. Sheiner E, et al: Obstetric risk factors and outcome of pregnancies complicated with early postpartum hemorrhage: a population-based study. *J Matern Fetal Neonatal Med* 18:149-154, 2005
7. Ginsberg KA, Valdes C, Schnider G: Spontaneous utero-ovarian vessel rupture during pregnancy: three case reports and review of the literature. *Obstet Gynecol* 69:474-476, 1987
8. Hodgkinsen CP, Christensen RC: Hemorrhage from ruptured utero-ovarian veins during pregnancy: report of three cases and review of the literature. *Am J Obstet Gynecol* 59:1112-1117, 1950