Conservative management of Retzius space hematoma following spontaneous vaginal delivery in a woman with an unscarred uterus: A case report

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ABSTRACT

Introduction: A retroperitoneal hematoma in obstetrics is very rare following spontaneous vaginal delivery. It requires a high index of suspicion, especially in a hemodynamically unstable patient with no active bleeding or external trauma postpartum, as early intervention is needed to prevent maternal morbidity and mortality. Conservative management may be an appropriate strategy in managing large hematomas even though surgical evacuation is classically recommended.

Case: We report the case of a 39-year-old woman, para three, with a hematoma of the Retzius space after spontaneous uncomplicated vaginal delivery. The patient had sudden abdominal pain associated with urinary retention, two hours after delivery. She had a palpable mass at the anterior upper part of the vaginal wall, near the fornices, but no abnormality was detected at the labia majora, labia minora and lower part of the vagina. A transabdominal ultrasound scan revealed a mixed-echogenicity mass between the bladder and lower part of the uterus measuring 110 × 90 × 60 mm. The patient’s hemoglobin level dropped from 12 g/dL to 10 g/dL. Given the patient’s clinically stable state, she was managed conservatively with antibiotics, analgesics and one unit of packed red blood cells, and was discharged home day 5 postpartum.

Conclusion: This case supports the conservative management of even large Retzius space hematomas for hemodynamically stable patients. A high index of suspicion and thorough evaluation are required when encountering a complaint of urinary retention and abdominal pain postpartum.

1. Introduction

Retroperitoneal hematoma in obstetrics is a rare cause of concealed postpartum hemorrhage but the exact incidence is not known. Concealed postpartum hemorrhage is mainly located in the vulva, vagina, broad ligament and rarely retroperitoneal [1]. The possible causes of Retzius space hematoma include surgical management of urinary incontinence, caesarean section and anticoagulant therapy [4]. Retzius space hematoma after spontaneous vaginal delivery in the absence of risk factors or any trauma is exceptionally rare and may be the result of a ruptured aneurysm or obstetrical coagulopathies [1]. Related physiological hemodynamic changes during pregnancy include decreased vascular resistance, engorgement of the pelvic vessels, and increased cardiac output and blood volume [1].

Classically, surgical evacuation is preferred in managing large retroperitoneal hematomas, especially when patients are acutely unwell or rapidly deteriorating [1]. A high index of suspicion and thorough evaluation are required for appropriate management, as retroperitoneal hematoma may result in maternal morbidity and mortality. Retzius space hematoma after spontaneous vaginal delivery in an unscarred uterus as described in this case is exceptionally rare and poses difficulty in diagnosis and appropriate management.

2. Case Presentation

A 39-year-old woman, para three, complained of sudden abdominal
pain associated with urinary retention, two hours after an uncomplicated spontaneous vaginal delivery of a 2510 g infant. Her obstetrical history was unremarkable. She had no known underlying blood disorders and no prior surgery. Her delivery progressed well spontaneously within 2 h, and the second stage lasted only 10 min. The placenta was delivered intact five minutes after fetal expulsion, and a first-degree laceration tear was repaired after childbirth.

On examination, she was hemodynamically stable with a blood pressure of 120/70 mmHg and a pulse rate of 90 bpm. An abdominal examination revealed mild tenderness on palpation at the suprapubic region with an absence of peritonism. The uterus was well contracted and centrally located. A pelvic examination demonstrated a palpable mass at the anterior upper part of vaginal wall, near the fornices. There was no evidence of active bleeding or hematoma over the vulva and the rest of the vaginal wall.

On transabdominal and transvaginal ultrasonography, there was a mixed-echogenicity mass between the bladder and lower part of the uterus, suspected to be a Retzius space hematoma, measuring 110 × 90 × 60 mm, with no peripheral vascularization and well defined (Fig. 1 and Fig. 2). No free fluid was seen in the pouch of Douglas and the adnexa were not visible. Laboratory blood tests repeated during the acute event showed the hemoglobin level was static and the coagulation profile normal.

As the patient had mild symptoms and was clinically stable, she was managed conservatively. Broad-spectrum antibiotics (intravenous cefuroxime and metronidazole) and regular analgesia were given. She was kept on close observation in the high-dependency care unit in the labour room. Laboratory blood tests repeated after 24 h showed the patient’s hemoglobin level had dropped from 12 g/dL to 10 g/dL, without symptoms of anemia or hemodynamic changes.

She had one unit of packed red blood cell transfused. Subsequently, she remained stable, ambulated well, was not febrile, pain-free, had no urinary retention or other symptoms and her hemoglobin level remained static. She was discharged home on day 5 postpartum. The total duration of antibiotic administration was two weeks. She was followed up at 2, 4 and 6 weeks postpartum. She was clinically well, and transabdominal ultrasound follow-up examination showed a complete resolution of the hematoma.

3. Discussion

The Retzius space contains loose connective tissue and fascia, and is a part of the extraperitoneal space between the pubic symphysis and the urinary bladder. Hematoma of the Retzius space usually follows pelvic trauma, and the formation of a Retzius hematoma following spontaneous vagina delivery is very rare [1]. In this case, there was no evidence of active bleeding or external trauma; the labour had progressed spontaneously (without induction) and the baby was delivered vaginally without instrumentation, which posed an initial diagnostic dilemma.

Hematoma formation in the Retzius space after a spontaneous vaginal delivery is believed to result from bleeding or rupture of the Santorini plexus, which may occur during the descent of the fetal head [1]. Pregnancy may weaken the plexus due to the progestrone effect. Decreased vascular resistance, engorgement of the pelvic vessels, and increased cardiac output and blood volume are physiological haemodynamic changes during pregnancy which can be part of the related process [1]. It can also occur in caesarean section, which will lead to intraabdominal bleeding that may require an urgent surgical intervention [3].

The patient can present with severe abdominal pain following delivery, in shock with a clinical picture out of proportion to estimated blood loss, a clinical sign of intraabdominal bleeding, and acute urinary retention in some delayed cases. Abdominal examination may reveal the sign of peritonism or palpable mass. Bimanual and vaginal examination could elicit the mass or fullness at the anterior part of the vagina. Acute pelvic pain is one of the most common postpartum symptoms. Equivocal physical examination findings will make correct diagnosis challenging. Transabdominal ultrasound is one of the imaging modalities that help in confirming the diagnosis but in some cases computed tomography with or without an angiogram is indicated [1]. Ultrasonography is ideal as a primary imaging modality in obstetric settings because it is readily available, portable and lacks ionizing radiation [5].

Classically, surgical exploration is required to remove a large retroperitoneal hematoma. However, conservative management can be considered, depending on the patient’s clinical condition. In those with hemodynamic instability and progressive hematoma, exploration and evacuation are done, and there is role for interventional radiology, such as uterine artery embolization. In stable cases with minimal symptoms, conservative management with antibiotics and analgesia can be instituted with vigilant monitoring. Patients who deteriorate while on conservative management will need immediate surgical exploration [1]. Most of the patients reported required surgical intervention as they were hemodynamically unstable [2–4,6,7] and the source of bleeding needed to be identified and hemostatic sutures applied to stop the bleeding.

The overall outcome is good with early diagnosis and prompt treatment. This case validates the use of a conservative approach in patients who are hemodynamically stable and can be supported with blood products, even for a large Retzius space hematoma. These hematomas are likely to respond with conservative management due to
self-tamponade and supportive management with fluid resuscitation and packed cell transfusion. Broad-spectrum antibiotics and analgesia are the key focus of management to prevent infection and provide supportive care. Reabsorption of the hematoma depends on its size and may take several weeks.

**Contributors**

Erinna Mohamad Zon was involved in patient care, participated in the conception of the case report and drafted the manuscript.

Nik Rafiza Afendi participated in the conception of the case report, acquired and interpreted the data and revised the article critically for important intellectual content.

Mohd Pazudin Ismail participated in the conception of the case report, contributed to data interpretation and revised the article critically for important intellectual content.

Adibah Ibrahim was involved in patient care and revised the article critically for important intellectual content.

Noor Adibah Hanum Che Hashim was involved in patient care, was responsible for the conception of the case report, drafted the manuscript and revised the article critically for important intellectual content.

All authors approved the final submitted manuscript.

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**Conflict of interest statement**

The authors declare that they have no conflict of interest regarding the publication of this case report.

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