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Case Report

Retzius space haematoma with retroperitoneal dissection after spontaneous vaginal delivery: an unusual presentation of ruptured paravesical plexus managed by bilateral internal iliac artery ligation

Ahmed Samy El-agwany *

Department of Obstetrics and Gynecology, El-Shatby Maternity University Hospital, Faculty of Medicine, Alexandria University, El-Shatby, Egypt

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ABSTRACT

Introduction: Abdomino-pelvic hematomas during pregnancy, labor or postpartum are severe and rare hemorrhagic complication that result from rupture in the pelvic vessels. Principles of surgical management of pelvic hematomas and postpartum hemorrhage are well known and documented and are of high clinical interest.
Aim: We report a rare case of hematoma following vaginal delivery.
Case study: A patient with a Retzius space hematoma after vaginal delivery presented with hemodynamic instability and abdominal distension with suprapubic bulge in the postpartum period. Ultrasound examination showed a heterogeneous mass between bladder and uterus suspicious of hematoma with another retroperitoneal one associated with right hydronephrosis.
Results: Exploratory laparotomy was performed that revealed a hematoma in the Retzius' space with infiltration of the wall of the bladder with extension to the paracolpos space and the right broad ligament to the retroperitoneal space. The bleeding source was suspected to be the blood vessels in the wall of the bladder that were hemostatically sutured. Bilateral uterine artery ligation with bilateral internal iliac artery ligation were done to control hematoma and atony and vertical vertical compression sutures were done for uterine atony. The hemorrhage was found to be secondary to rupture in the paravesical venous vessels.
Discussion: Hematoma in the Retzius' space is a rare complication. It needs urgent diagnoses and management. Few cases were reported in the literature. The condition may pose diagnostic problems, as pelvic bones let only a limited examination, but requires an undelayed handling. This was illustrated by determining a complete extent of the hematoma only intraoperative. The authors made an accurate diagnosis and applied a necessary treatment in an urgent situation. The technique of the vessel ligation was a demanding, but optimal solution.

* *Correspondence to*: Department of Obstetrics and Gynecology, El-Shatby Maternity University Hospital, Faculty of Medicine, Alexandria University, Port Said Street, El-Shatby, Alexandria 21526, Egypt. Tel.: +20 122 825 42 47.
E-mail address: Ahmedsamyagwany@gmail.com

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Conclusions: This article focuses attention at an uncommon obstetrical situation and delivers actual and practical advice for management.

1. Introduction

Abdomino-pelvic hematomas during pregnancy, labor or postpartum are severe and rare hemorrhagic complication that result from rupture in the pelvic vessels.[1,2]

Puerperal hematomas are classified as vulvar, vulvovaginal, vaginal, or subperitoneal[3] that might represent a significant hemorrhage and should be considered as obstetric emergencies. The extent of hematoma during vaginal delivery corresponds to the degree of progression of parturition and the volume of blood accumulated. Puerperal hematomas are generally involving the branches of the hypogastric artery.[4] Most hematomas will present within 24 h of delivery. External ureteral obstruction by a retroperitoneal hematoma is rare, but embolization or ligation of the involved artery is effective treatments.

Large pelvic hematomas are very uncommon after spontaneous vaginal delivery and there are very few similar case reports. On the other hand, pelvic hematomas are well known after traumatic instrumental vaginal deliveries. From management point of view, there is no much difference between the two situations. Principles of surgical management of pelvic hematomas and postpartum hemorrhage are well known and documented and are of high clinical interest.

2. Aim

We report a rare case of puerperal hematoma in primipara following vaginal delivery that was successfully managed with conservative measures.

3. Case study

A 20-year-old primipara was admitted to our hospital after vaginal delivery at home since 3 h before admission without any medical attendance except for a daya and she gave birth for a viable full-term male fetus. Her relatives indicated that she had not suffered from blood coagulation disorders and had not taken any special drugs. They indicated delivery of the placenta was done with no episiotomy, they indicated also that the labor was short, ended in 1 hour (precipitate labor) she deteriorated after delivery with severe abdominal pain especially in the suprapubic area, urine retention and disturbed consciousness.

General examination revealed hemodynamic instability with drowsy state. Heart rate was 120 bpm and blood pressure was 90/60 mmHg with hemoglobin level of 7 g%, platelet count 150 000/mcL and prothrombin activity was 60%. Intravenous fluids with blood transfusion were initiated immediately. A pelvic examination revealed a gravid uterus extending to level of 28 weeks with deviation to the left side and a painful, non-mobile and soft mass extending suprapubically about 20 cm in dimension mainly on the right side. Vaginal examination revealed swollen vulva by edema with no cervical or vaginal lacerations or incisions, and vaginal bleeding moderate in amount from the soft enlarged uterus. Foley's catheterization of the bladder revealed smoky red urine.

On transvaginal and transabdominal sonography, the abdominal mass was confirmed about 20 × 15 cm heterogonous mass between the uterus and the bladder, mainly on the right side and no free fluid in the Douglas pouch or Morrison pouch, but there was heterogeneous mass about 15 cm beside

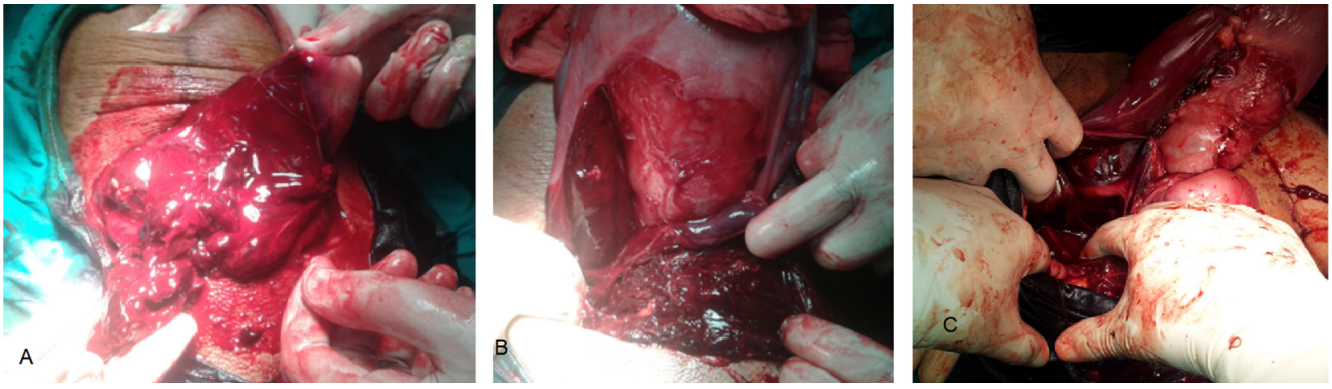

Fig. 1 – Hematoma in space of Retzius before opening the visceral peritoneum (A); hematoma covering the bladder wall extending in the right broad ligament with the uterus and cervix free and intact (B); dividing the right round ligament showing extension of the hematoma in the paracolpos space with the ureter seen up and external iliac artery below (C).

the uterus on the right side that were both suspicious of hematomas. The right kidney was dilated than the left one.

Due to hemodynamic instability, the patient was indicated for exploratory laparotomy. At exploratory laparotomy a large hematoma was found in Retzius' space and the anterior wall of the bladder mainly the front and right wall, which appeared thickened and swollen below the peritoneum with extension of the hematoma down to the paracolpos space and to the right broad ligament to the retroperitoneal space. Incision of the uterine peritoneum at the upper level of the hematoma for dissection and identification of the bladder was done. We tried to drain the hematoma completely but could not be accomplished because of large infiltration of the bladder wall with hematoma. The bladder was intact. The blood loss was estimated to be 1.5 L. Bilateral uterine artery ligation and vertical compression sutures for atonic postpartum hemorrhage were done. Evidence of bleeding source was identified as the blood vessels of the wall of the bladder that were sutured but the area was very vascular. So bilateral internal iliac artery ligation was done where right was approached through lateral approach by dividing the round ligament as it could not be approached by the medial approach as retroperitoneum was infiltrated by hematoma that could not be identified and the left was ligated by medial approach as the peritoneum overlying was free. Both ureters were identified where the right was more distended than the left by the compressing hematoma surrounding. This combined with tight vaginal pack for the dead space of the paracolpos that diminished the bleeding (Figs. 1 and 2). The patient's general condition stabilized with blood and plasma transfusion. Intraperitoneal drains were inserted. The patient's postoperative course was smooth and the pack was removed after 24 h, the drains after 48 h with minimal collection. The stitches were removed after 10 days with the urinary catheter. Ultrasound revealed neither residual hematoma nor hydronephrosis.

4. Results and discussion

Puerperal hematomas occur in 1:309 to 1:1500 deliveries, with hematomas complicating 1:4000 vaginal deliveries.[3,5,6] About 85%–93% arise from episiotomy, especially mediolateral type[3,7,8] Hematoma in the Retzius' space is a rare complication. Most commonly, hematoma in the Retzius' space, is due to surgery for urinary incontinence, anticoagulant therapy or cesarean delivery.[9–11] Two case reports were described in the literature where the authors found blood collection in the Retzius space, associated with hemorrhagic shock after delivery, due to rupturing the inferior artery and paravesical plexus (Santorini venous vessels in male).[12]

In our case, a heterogeneous mass on ultrasound postpartum raised the suspicious of hematoma. Our patient presented risk factors such as abnormal labor as seen from the acute onset of the vulvar edema. Only through intraoperative exploration it was possible to demonstrate the hematoma in the bladder wall, which appeared edematous and swollen. The worsening of the pain and urinary retention, with the evidence from diagnostic imaging suggested the diagnosis of the hematoma.

The hemodynamic changes during pregnancy and the mechanical stress are the major predisposing factors. The

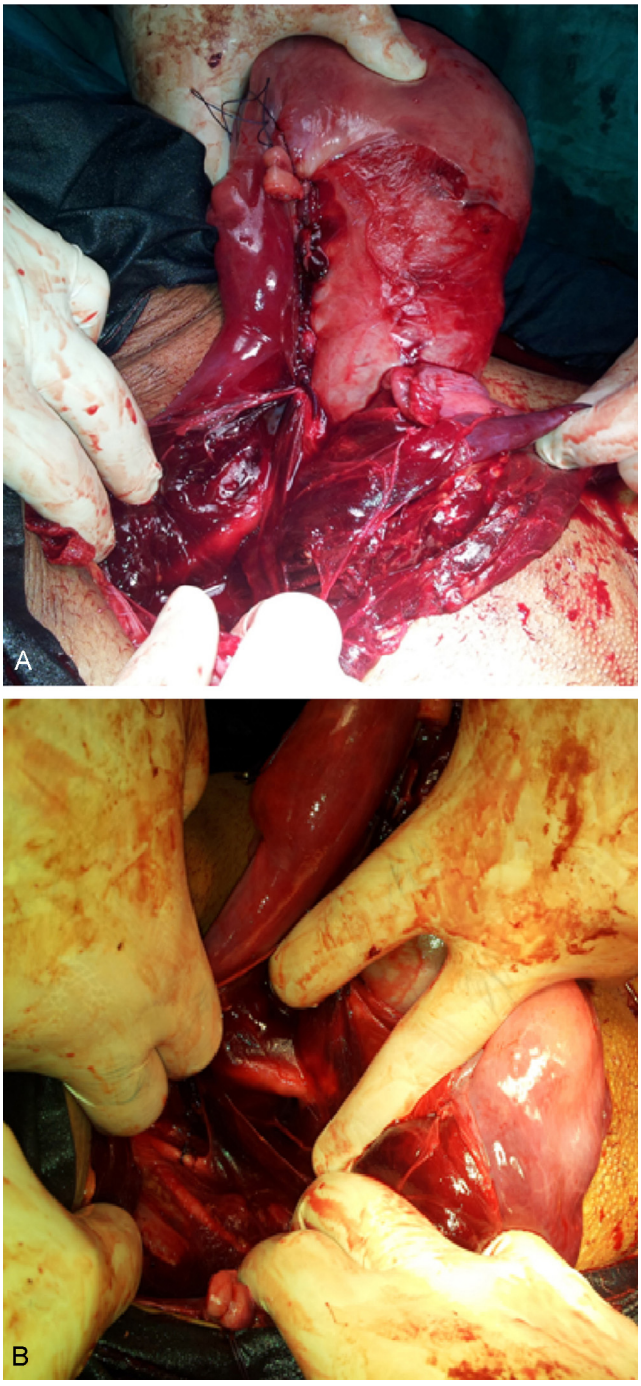

Fig. 2 – Uterus and cervix free with the hematoma in bladder wall on the right with extension in broad ligament and ureteral decompression that is dilated and exposed here (A); right internal iliac artery ligated by anterior approach with the external iliac artery and ureter secured as seen here (B).

venous load in the pelvic vessels is increased during pregnancy by stress that leads to venousectasia with reduced resistance of the blood vessels. In our case, the external genitalia were free, thus ruling out the injury of the pudendal artery and its branches. Intraoperative finding suggested hemorrhage due to rupture in the Santorini venous plexus which is most

common to occur by the thrust of the fetal head during descend and delivery, and fragility of the blood vessels.[12]

There were no consequences for the bladder as a lot of the blood supply is gone because of the collaterals between the internal and the external iliac arteries. The upper tract obstruction did not persist and showed rapid recovery after relieve of ureteric obstruction from hematoma. The bladder wall hematoma was a contributing factor for the ureteric obstruction.

Hematoma in the Retzius' space is a rare complication. It needs urgent diagnoses and management. Few cases were reported in the literature. The condition may pose diagnostic problems, as pelvic bones let only a limited examination, but requires an undelayed handling. This was illustrated by determining a complete extent of the hematoma only intraoperative. The authors made an accurate diagnosis and applied a necessary treatment in an urgent situation. The technique of the vessel ligation was a demanding, but optimal solution.

5. Conclusions

This article focuses attention at an uncommon obstetrical situation and delivers actual and practical advice for management.

Ethical approval

Written informed consent was obtained from the patients for publication of this case report and accompanying images.

Conflict of interest

None declared.

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