

## Retzius' space haematoma after spontaneous delivery: a case report

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**Abstract.** We report a case of a haematoma of the Retzius space after spontaneous uncomplicated delivery. In the postpartum period, the patient complained of urinary retention and pain in the hypogastric region radiating to her left hip and leg. The ultrasound examination showed the presence of 160x100x80mm confluent solid and liquid areas with peripheral vascularization. At exploratory laparotomy a haemorrhagic infiltration was found in Retzius' space and the anterior wall of the bladder, which appeared thickened and swollen below the peritoneum. We tried to drain the haematoma, however, we failed to drain it completely because of the large blood infiltration in the bladder wall. Clinical and ultrasound follow-up examinations showed a progressive reduction of the haematoma which completely disappeared nine months later. The haemodynamic changes occurring during pregnancy and labour, associated with strong mechanical stress, seem to be among the major causative factors of haematoma formation. Moreover, the venous load in the pelvic vascular system is increased during pregnancy; a stress-induced increase in venous blood pressure might play a prominent role, especially in cases of venous ectasia, where the resistance of blood vessel walls is reduced. Intraoperative evidence seemed to suggest a haemorrhage secondary to the rupture of the venous vessels in the Santorini plexus. The rupture was probably caused by the thrust of the fetal head, associated with abnormality or fragility of the blood vessels, or by some pathologic changes occurring in the anatomical structures during pregnancy, which could not be accurately defined because of the severity and degree of the haematoma infiltration found intraoperatively. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** Retzius' space haematoma, spontaneous delivery, ultrasound diagnosis, postpartum complication

### Introduction

The appearance of abdominal or pelvic haematomas following blood vessel rupture during pregnancy, labour or puerperium is a severe, though rare, haemorrhagic complication. The medical literature has occasionally reported cases of subcapsular haematoma of the liver (1), detachment of paravaginal connective tissue, perirenal haematoma after delivery, and haemorrhage from splenic, renal, uterine and utero-ovarian vessels (2).

We report a case of a haematoma of the Retzius space after spontaneous uncomplicated delivery.

### Case report

A 33-year-old secundipara came to our observation after an uncomplicated pregnancy and spontaneous at-term delivery of a 2,770 g infant. The woman reported that during pregnancy she had not suffered from blood coagulation disorders or varices and had not taken any drugs. She also had a normal delivery of the placenta and a reparation of a first-degree laceration after childbirth.

In the first postpartum hours, the patient complained of urinary retention that regressed after the application of a bladder catheter; she later developed

pain in the hypogastric region radiating to her left hip and leg. A pelvic examination revealed a painful, non-mobile, hard 15 cm tumescence interesting the entire left hemi-pelvis. On transvaginal and transabdominal sonography, the tumescence appeared as a mixed-echogenicity mass, where hyperechogenic areas were present alongside hypo- and anechogenic areas. The ultrasound examination showed the presence of 160x100x80 mm confluent solid and liquid areas with peripheral vascularization; the adnexa were not visible and no free fluid in the Douglas pouch was found. A CT scan confirmed the ultrasound diagnosis, showing a mass that displaced the uterus to the right and compressed the bladder; the mass was clearly not originating from the adnexa. The CT-scan evidence was consistent with a diagnosis of postpartum haematoma. Blood tests showed normal coagulation parameters, with no signs of severe anemia.

Given the patient's clinically stable condition, we first opted for the conservative management. Over the following hours, the pain considerably worsened, indicating the need for exploratory laparotomy.

The CT-scan diagnosis was intraoperatively confirmed. A hemorrhagic infiltration was found in the Retzius' space and in the anterior wall of the bladder, which appeared thickened and swollen below the peritoneum; no signs of bleeding were visible. Since the bladder was intact, we tried to drain the haematoma. However, we failed to drain it completely because of the large blood infiltration in the bladder wall.

The patient's postoperative course was uneventful, with significant regression of the painful symptoms and disappearance of the urinary retention. Clinical and ultrasound follow-up examinations showed a progressive reduction of the haematoma (Fig. 1), which completely disappeared nine months later.

## Conclusions

Retzius' space haematoma is a rare condition. The possible causes include surgical management of urinary incontinence (3), anticoagulant therapy (4), and Cesarean section (5).

In the literature another case report similar to our patient's case is described. The authors observed a



Figure 1. The pelvic mass still present at the follow-up transabdominal ultrasound examination (Utero: uterus; vesicica: bladder; ematoma: haematoma)

blood infiltration in the Retzius space, accompanied by hemorrhagic shock at onset, following the rupture of the right inferior vesical artery and venous vessels of the Santorini plexus (6).

In our case, the painful tumescence seen post partum in a patient with stable haemodynamic conditions raised the problem of differential diagnosis with necrotizing uterine myoma, an adnexal mass or a haematoma of a different origin. Even though the diagnostic imaging seemed to support the last hypothesis, our patient presented no risk factors such as abnormal labour or precipitate delivery, fetal macrosomia, maternal coagulopathy or ongoing drug therapy. Moreover, although the patient reported no previous history of uterine myoma, the presence of peripheral blood vessels around the mass seemed to indicate a necrotizing myoma, possibly undetected on the first-trimester ultrasound examination but considerably enlarged during pregnancy. Only through intraoperative exploration it was possible to demonstrate that the peripheral vascularization shown by color Doppler sonography was localized in the bladder wall, which appeared edematous and swollen. The differential diagnosis with an adnexal mass was difficult, because the enlarged uterus as a result of the recent pregnancy and the presence of the mass itself made it impossible to view the adnexa on transvaginal ultrasound. A CT-scan had to be performed to exclude the adnexal origin of the mass.

Finally, the rapid onset of the tumescence, the worsening of the pain accompanied by urinary retention, and the evidence obtained from diagnostic imaging pointed to the diagnosis of a haematoma. The haemodynamic changes occurring during pregnancy and labour, associated with strong mechanical stress, seem to be among the major causative factors of haematoma formation. Moreover, the venous load in the pelvic vascular system is increased during pregnancy; a stress-induced increase in venous blood pressure might play a prominent role, especially in cases of venous ectasia, where the resistance of blood vessel walls is reduced. In our case, the labia majora and minora, the vagina, the vestibule of the vagina, and the clitoris were preserved, thus ruling out a lesion of the pudendal artery and its branches. On the other hand, intraoperative evidence seemed to suggest a haemorrhage secondary to the rupture of the venous vessels in the Santorini plexus. The rupture was probably caused by the thrust of the fetal head, associated with abnormality or fragility of the blood vessels, or by some pathologic changes occurring in the anatomical structures during pregnancy, which could not be accurately defined because of the severity and degree of the haematoma infiltration found intraoperatively.

## References

1. Harti A, Louardi H, Benaguida M, Abi F, Ait Allah M, Aderdour M. Subcapsular haematoma of the liver, a complication of pregnancy toxemia. *Rev Fr Gynecol Obstet* 1990; 85 (2): 127-30.
2. Becker R, Kowalsky BL, Hatzmann W. Rupture of the uterine artery after spontaneous delivery with unusual course in childbed. *Z Gerurthilfe Neonatol* 2002; 206 (3): 107-13.
3. Salvat J, Yiunes B, Schmidt MH, Slamani L, Vincent-Genod A. Mixed endoscopic colposuspension (retroperitoneal and vaginal) for the treatment of female stress urinary incontinence: technique and preliminary results. *Contracept Fertil Sex* 1998; 26 (2): 159-66.
4. Dupas B, Barrier J, Michel P, et al. Diagnosis of haematoma in the Retzius space during anticoagulant therapy. Prospective study (11 cases). *Sem Hop* 1983; 59 (45): 3115-9.
5. Hertzberg BS, Bowie JD, Kliewer MA. Complications of cesarean section: role of transperineal US. *Radiology* 1993; 188 (2): 533-6.
6. Ottolenghi-Preti GF, Sesenna R. Singolare emorragia postpartum dello spazio del Retzius. *Ann Ost Gin Med Perin* 1972; 93 (6): 443-50.

Accepted: 23 September 2005

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