

Large Retroperitoneal Hematoma after Vaginal Cystocele Repair: A Case Report

Leila Pourali (MD)¹, Atiyeh Vatanchi (MD)^{1*}, Behzad Aminzadeh (MD)², Samira Armanpour (MD)³

¹ Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

² Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

³ Associate Professor, Department of Radiology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

⁴ Gynecologist and Obstetrician, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

ARTICLE INFO	ABSTRACT
Article type: Case report	Background & aim: Anterior colporrhaphy with native tissue repair is a common gynecological surgery to correct anterior vaginal wall prolapse. Here, we introduce a rare case of retroperitoneal hematoma after vaginal cystocele repair.
Article History: Received: 14-Jun-2023 Accepted: 14-Apr-2025	Case report: A 33-year-old woman with abdominal pain and pelvic pressure referred to the Gynecology Emergency Unit of our hospital in Mashhad, Iran. She underwent vaginal cystocele repair on previous day in another hospital. Vaginal examination showed tenderness and bulging with a large ecchymotic area around labia majora that extended to buttock. On admission to our hospital, her vital signs showed tachycardia (pulse rate of 120 beats/min) with normal blood pressure and respiratory rate. Although the patient had received three units of packed red blood cells on previous day, hemoglobin level (Hb) was 8 g/dl at admission time. Computed tomography showed a large presacral hematoma measuring 117 × 86 × 71 mm and extending to the perineal area. with extension to perineal area. After transfusion of a total of five units of packed red blood cells, with regard to optimal response to conservative management, normal vital sign and decreased abdominopelvic pain and discomfort, there was no need for further therapeutic interventions such as embolization or surgical management.
Key words: Hematoma Retroperitoneal Hemorrhage Uterine Prolapse	Conclusion: Using imaging modalities for accurate diagnosis, retroperitoneal hematoma could be managed with conservative treatment.

► Please cite this paper as:

Pourali L, Vatanchi A, Aminzadeh B, Armanpour S. Large Retroperitoneal Hematoma after Vaginal Cystocele Repair: A Case Report. Journal of Midwifery and Reproductive Health. 2026; 14(4): 5779-5783. DOI: 10.22038/jmrh.2025.73095.2136

Introduction

The most common technique for repairing the anterior vaginal wall is anterior colporrhaphy with native tissue repair. Serious intraoperative or postoperative complications for anterior or posterior vaginal wall prolapse repair are rare (1).

Retroperitoneal hematoma is an infrequent adverse event associated with vaginal surgical interventions, which may significantly elevate the risk of patient morbidity and mortality (2). A broad ligament or retroperitoneal hematoma

can develop following a cesarean or vaginal delivery. If the patient is stable, expectant management is appropriate. On the other hand, if the hematoma is expanding, or the patient is unstable due to severe bleeding, the retroperitoneal space should be explored (3).

This case report presents an uncommon, substantial hematoma within the retroperitoneal space following surgical repair of a vaginal cystocele.

* Corresponding author; Atiyeh Vatanchi, Associate Professor, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: 00985138012477; Email: vatanchia@mums.ac.ir



Copyright © 2023 Mashhad University of Medical Sciences. This work is licensed under a Creative Commons Attribution Noncommercial 4.0 International License <mailto:https://creativecommons.org/licenses/by/3.0/>

Case presentation

A 33-year-old woman was referred to the Gynecology Emergency Unit of an academic hospital of Mashhad University of Medical Sciences, Iran in January 2022 due to abdominal pain and pelvic pressure. She underwent vaginal surgery for anterior vaginal compartment repair in another hospital the previous day. The gynecologist surgeon noted that the surgery was uneventful and there was no significant intraoperative bleeding. However, in the postoperative recovery room, the patient complained of severe pelvic pain and her pulse rate was 120 beats/min and blood pressure=90/60. Vaginal examination showed tenderness and bulging in the vagina, so it was packed and blood transfusion was started due to low hemoglobin concentration (hemoglobin level was 7 g/dl). Emergent computed tomography was performed and showed large hematoma with 117×86×71 mm in size at presacral space which extended to perineal area, so she was referred to our hospital for the management of hematoma.

At the admission time in our hospital, the vital sign showed tachycardia (PR=120/m), with normal blood pressure (BP=100/60), and urine output was normal. There was a large and firm ecchymotic area around the labia majora that extended to the buttock (Figure 1).



Figure 1. Ecchymotic area around the labia majora that extended to the buttock

The patient had received three units of packed red blood cells and two units of fresh frozen plasma (FFP) in the first hospital, however she was still pale and tachycardic with Hb=8 g/dl. So, two additional units of packed red blood cells were transfused. Parenteral analgesics (acetaminophen (1 g every 8 hours)) were administered to control severe patient's pelvic pain. After a total infusion of five units of packed cells and administration of analgesics, the serial hemoglobin evaluation showed normal status, so with regard to the optimal response to the conservative management, normal vital sign and decreased abdominopelvic pain and discomfort, there was no need for other therapeutic interventions; like embolization or surgical modalities.

She was discharged on third day in stable condition. Six weeks later in the follow-up visit, she was completely stable, perineal hematoma completely resorbed and she had no complaints.

Informed consent was obtained from the patient to publish the information and related images.

Discussion

Based on the available literature, which consists primarily of case reports, retroperitoneal hematoma following vaginal surgery appears to be an uncommon postoperative complication (4).

The vaginal artery, which is a branch of the internal iliac artery branch has important anastomosis with uterine artery at the lateral margin of the vagina; so laceration or tissue disruption in this region during manipulation may result in vascular injury. Given the extensive and interconnected vasculature of the retroperitoneal space, this could precipitate rapid and voluminous hemorrhage within this anatomical compartment (5).

Clinical manifestations of retroperitoneal hematoma are often non-specific. Abdominal or flank pain, as well as ecchymosis in the lumbar region, and hemodynamic compromise represent late-stage presentations due to the retroperitoneal space's capacity for significant blood accumulation prior to symptom onset.

Retroperitoneal hemorrhage is a rare postoperative complication that may present with delayed and nonspecific clinical

manifestations. In contrast, in the present case, clinical signs of retroperitoneal hemorrhage developed within the first few hours following surgery, highlighting the importance of early recognition of this potentially life-threatening complication. This difference could be due to lower hemoglobin concentration level before the surgery in this case (Hb=11 g/dl).

For patients who are hemodynamically stable, imaging should be obtained. Contrast-enhanced computed tomography (CT) is the preferred imaging modality for assessing the retroperitoneal region (6). In the present case, CT was performed and demonstrated a

retroperitoneal hematoma observed in presacral space. In our academic hospital, magnetic resonance imaging (MRI) also was performed to evaluate more precise details. It showed presacral mass posterior to the rectum that was consistent with hematoma (Figure 2).

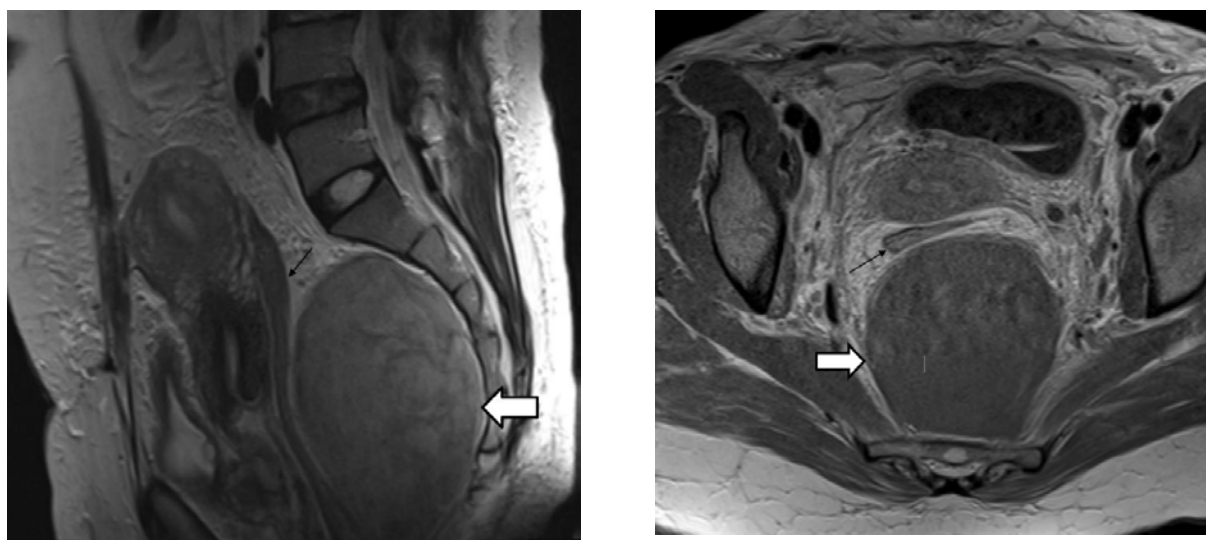


Figure 2. Sagittal T2W (A) and axial post-contrast T1W (B)

MRI images of pelvis showing a non-enhancing presacral mass (A arrow) posterior to the rectum (B arrow), consistent with hematoma

However, retroperitoneal hematoma constitutes an infrequent adverse outcome following vaginal surgical procedures, it is mentioned followed by vaginal hysterectomy and sacrospinous ligament fixation as the case reports (7). Like the current case, both of those cases were managed by non-surgical interventions.

The therapeutic approach to retroperitoneal hematoma is contingent upon the patient's clinical condition and the underlying etiology. The majority of patients like the current case responded to conservative treatment including intravenous fluid and blood products. However,

some patients may need angiographic or surgical interventions (8).

Patients exhibiting hemodynamic stability without criteria warranting exploratory laparotomy may be treated conservatively. This entails analgesia, serial abdominal examinations, repeated laboratory assessments, and follow-up imaging as clinically indicated. Angiographic embolization is often efficacious in controlling hemorrhage when active contrast extravasation is visualized on computed tomography. Nevertheless, patients managed conservatively remain at risk of developing abdominal compartment syndrome secondary

to massive retroperitoneal hematoma, potentially necessitating surgical decompression. Surgical intervention may be indicated in cases of persistent hemorrhage despite conservative measures (9).

Patients presenting with hypovolemic shock unresponsive to aggressive resuscitation, accompanied by an expanding hematoma or active contrast extravasation on CT imaging, should be considered candidates for embolization or surgical intervention (10).

Surgical intervention is typically indicated for patients experiencing unsuccessful angiographic procedures, concomitant surgical pathologies, or compressive symptoms such as hydronephrosis, femoral neuropathy or abdominal compartment syndrome (8).

Fortunately, in this case, hemodynamic condition became stable by conservative management and there was no need for angiographic or surgical interventions which was similar to a previous report (7).

Conclusion

Retroperitoneal hematoma is one of the rare complications in vaginal surgeries that must be included for diagnosis in case of pelvic pain or hemodynamic instability after vaginal surgeries. Retroperitoneal hematoma could be successfully managed by conservative treatment and assisting precise imaging modality and careful vital sign monitoring to precipitate the resuscitation effort.

Declarations

Acknowledgements

The authors would like to thank the patient for her cooperation in allowing publishing the results.

Conflicts of interest

The authors declared no conflicts of interest.

Ethical considerations

An informed consent was obtained from the patient to publish the information and related images.

Code of ethics

Not applicable.

Use of Artificial Intelligence (AI)

We didn't use any AI.

Funding

This study received no specific grant from any public agency in the public, commercial, or not-for-profit sectors.

Authors' contribution

LP and AV contributed to conceptualization, data collection and supervision the report preparation. BA performed the radiology section of the report, and SA helped to collect data and write the report. All authors read and approved the final version of the article.

References

1. Jones HW, Rock JA. TeLinde's Operative Gynecology. 12th edition. Philadelphia: Wolters Kluwer, 2020.
2. Alturki F, Ponette V, Boucher LM. Spontaneous retroperitoneal hematomas following uncomplicated vaginal deliveries: a case report and literature review. *Journal of Obstetrics and Gynaecology Canada*. 2018; 40(6): 712-715.
3. Van Le L, Handa VL. Te Linde's operative gynecology. Lippincott Williams & Wilkins; 2023.
4. Pourali L, Vatanchi A, Aminzadeh B, Armanpour S. Retroperitoneal hematoma following uncomplicated normal delivery: case report. *The Iranian Journal of Obstetrics, Gynecology and Infertility*. 2022; 25(5): 109-113.
5. Corton M., DeLancey J. Surgical anatomy of the female pelvis. In: Handa V., Van Le L., editors. *Telinde's Operative Gynecology*. 12th ed. Wolters Kluwer Health; Philadelphia, PA: 2019; P. 2-42.
6. Chan YC, Morales JP, Reidy JF, Taylor PR. Management of spontaneous and iatrogenic retroperitoneal haemorrhage: conservative management, endovascular intervention or open surgery?. *International Journal of Clinical Practice*. 2008; 62(10): 1604-13.
7. Fuchs A, Parthasarathy KN, Coots A, Chauhan NR, Jiang X. Large Retroperitoneal Hematoma: A Rare Intraoperative Complication of Total Vaginal Hysterectomy. *Cureus*. 2021; 13(7): e16760.
8. Warren MH, Bhattacharya B, Maung AA, Davis KA. Contemporary management of spontaneous retroperitoneal and rectus sheath hematomas. *The American Journal of Surgery*. 2020; 219(4): 707-710.

9. Diamond IR, Hamilton PA, Garber AB, et al. Extravasation of intravenous computed tomography scan contrast in blunt abdominal and pelvic trauma. *Journal Trauma*. 2009; 66: 1102.
10. Pourali L, Ayati S, Pezeshkirad M, Golmohammadi MS. Therapeutic uterine artery embolization in a life-threatening postpartum hemorrhage: a case report. *Reviews in Clinical Medicine*. 2017; 4(3): 140.