

Ovarian Vein Thrombosis in the Postpartum Period: A Case Report from Mogadishu, Somalia

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Background: Ovarian Vein Thrombosis (OVT) is a rare form of pelvic venous thrombosis that occurs mostly during postpartum period. Diagnosis often requires a high index of clinical suspicion and appropriate imaging. Lack of clinical awareness may result in OVT being missed or diagnosed late.

Case Presentation: We report the case of a 30-year-old gravida 2 para 1 woman from Somalia who delivered a healthy male infant via spontaneous vaginal delivery at 37 + 4 weeks. The delivery was uncomplicated, and she was discharged in stable condition. The postpartum course was initially uneventful. On postpartum day 7, she developed right lower abdominal pain and episiotomy site discomfort. She remained afebrile with stable vital signs. Transabdominal doppler ultrasound revealed thrombosis of the right ovarian vein. She was managed with a combination of anticoagulants and antibiotics.

Conclusion: OVT is a rare but clinically significant condition. It can be diagnosed with an ultrasound (US) Doppler or computed tomography (CT). Anticoagulation remains the mainstay of treatment. In this case, prompt recognition and initiation of therapeutic enoxaparin resulted in full symptom resolution and an uneventful recovery.

Keywords: ovarian vein thrombosis, postpartum, case report, anticoagulation, Somalia

Introduction

Ovarian vein thrombosis (OVT) most commonly occurs in the post-partum period and is linked to serious complications, such as pulmonary embolism, inferior vena cava extension, renal obstruction and sepsis. Other causes include systemic inflammatory disorders, cancer, and primary thrombophilia.¹ Estimations indicate a rate of 0.5–2 cases per 1000 vaginal deliveries and around 20 cases per 1000 cesarean deliveries.² The pathophysiology of OVT is likely attributable to various factors. Pregnancy induces hormonal alterations, notably elevated estrogen levels, which lead to hypercoagulability. During pregnancy, there is an increase in coagulation factors II, VII, VIII, and X, along with platelet-activating factors and von Willebrand factor. Furthermore, levels of protein S and antithrombin III diminish, and activated protein C resistance is common.³

In pregnancy-related ovarian vein thromboses, it is observed that the right ovarian vein is usually affected (70–90%), followed by bilateral ovarian vein involvement (11–14%). The most probable explanations for this include the absence of competent valves in the elongated right ovarian vein, retrograde flow in the left ovarian vein, and the influence of the gravid uterus, which inhibits stasis and ascending infection, thereby rendering the left-sided vein less susceptible to thrombosis.⁴

Nevertheless, OVT is uncommon, and a consensus on its diagnosis and management has not been established. Recommendations have been provided to address episodes similarly to other deep venous thromboses in the lower limbs.⁵ Low-resource settings such as Somalia, there are currently no previously reported cases of postpartum ovarian vein thrombosis in the literature. To our knowledge, this represents the first reported case from the country. This case describes a patient diagnosed with postpartum ovarian vein thrombosis who was successfully treated with anticoagulation therapy.

Case Presentation

A 30-year-old woman, gravida 2 para 1 presented for antenatal care. Her obstetric history included one previous spontaneous vaginal delivery 14 years earlier, resulting in a healthy living child. At her initial visit, she reported suprapubic pain, left flank pain, nausea, reduced appetite, and constipation. She had no known chronic medical conditions. Abdominal ultrasound showed no abnormalities, and obstetric ultrasound confirmed a viable intrauterine pregnancy corresponding to 9 weeks of gestation. The patient later presented in labor. On admission, cervical dilation was 2 cm, the fetus was in cephalic presentation, and membranes were intact. Cardiotocography demonstrated a reactive fetal heart rate of 148 beats per minute. Routine investigations, including complete blood count, urinalysis, random blood glucose, antenatal screening tests, and blood grouping, were performed. Obstetric ultrasonography revealed a single live fetus with regular cardiac activity (154 beats/min) in cephalic presentation and longitudinal lie. Fetal biometric measurements corresponded to a gestational age of approximately 37 weeks and 4 days, with an estimated fetal weight of 3279 ± 478 g. The placenta was located on the fundal wall with Grade III maturity and normal retroplacental appearance. Doppler assessment demonstrated normal fetoplacental circulation. Amniotic fluid volume was adequate, and no gross fetal congenital anomalies were detected.

The following morning, the patient delivered a live male neonate via spontaneous vaginal delivery, with an Apgar score of 8 at 1 minute. The placenta was delivered completely, and an episiotomy was performed and repaired. Postpartum, the patient remained hemodynamically stable and received oxytocin and rectal misoprostol as standard management. She was discharged the following day with routine follow-up appointment.

On postpartum day 7, the patient was readmitted with complaints of persistent episiotomy-site pain, perineal discomfort, and right lower abdominal pain. Laboratory evaluation revealed leukocytosis with a white blood cell count of $11.5 \times 10^3/\mu\text{L}$ (reference range: $4.0\text{--}10.0 \times 10^3/\mu\text{L}$). Renal and liver function tests were within normal limits. The coagulation profile was also normal. Pelvic ultrasonography demonstrated dilated right ovarian vein with absent flow and intraluminal echogenic areas (Figure 1). Contrast-enhanced CT confirmed a distended, non-opacified right ovarian vein containing intraluminal hypodensity from the pelvis to the IVC drainage site, without surrounding inflammatory changes, abscess, or IVC involvement. The left ovarian vein was patent with normal caliber (5–6 mm), and few peri-uterine pelvic varicosities were noted with no pelvic masses (Figure 2).

A diagnosis of puerperal right ovarian vein thrombosis was made. The patient was admitted and started on therapeutic subcutaneous enoxaparin administered twice daily. Empiric intravenous ceftriaxone (1 g twice daily) was also initiated due to clinical concern for postpartum sepsis. The patient demonstrated marked clinical improvement within 24 hours. After three days of inpatient care, antibiotics were discontinued, and she was discharged on oral rivaroxaban for continued anticoagulation for three months. Outpatient follow-up was arranged for the following week.

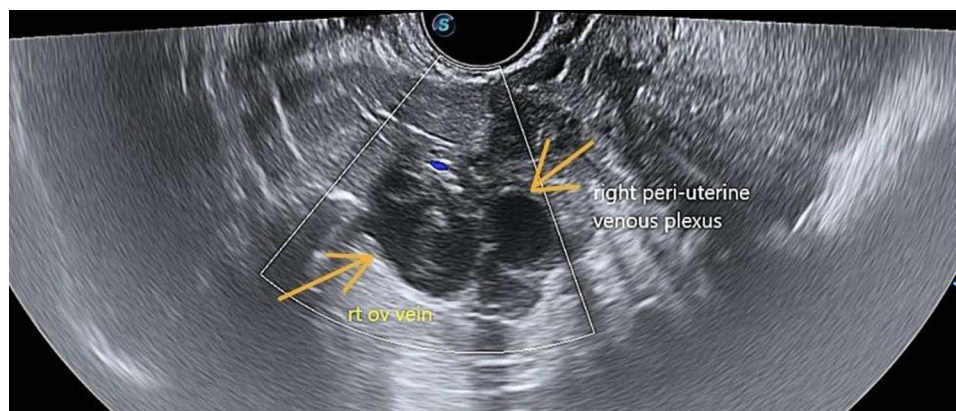


Figure 1 Ultrasound of the right ovarian vein demonstrating a dilated vein with a maximum diameter of 12 mm, right peri-uterine plexus indicated. The lumen appears hypoechoic with intraluminal echogenic regions extending from the pelvic origin to its junction with the inferior vena cava (IVC).



Figure 2 Contrast-enhanced CT scan showing a distended, non-opacified right ovarian vein (arrow) measuring up to 12 mm, with intraluminal hypodensity extending from the pelvis to its drainage into the inferior vena cava (IVC). No perivenous fat stranding, abscess formation, or IVC involvement is seen. The left ovarian vein is patent and of normal caliber (5–6 mm). Few peri-uterine pelvic varicosities are noted, and no pelvic masses are present.

Discussion

Ovarian vein thrombosis is a rare but clinically significant postpartum complication. Its presentation is often nonspecific, with common symptoms including lower abdominal or flank pain, fever, and malaise, which closely mimic more frequent conditions like endometritis or pyelonephritis.⁶ This overlap necessitates a high index of suspicion among clinicians to ensure timely diagnosis and prevent serious complications, such as pulmonary embolism (PE), however, this patient had no respiratory symptoms such as dyspnea or chest pain, and oxygen saturation remained normal; therefore, further imaging for PE was not performed.

The pathophysiology of postpartum OVT is a direct manifestation of Virchow's triad, which is accentuated in the puerperium. Physiological hypercoagulability persists for several weeks after delivery, peaking between 6 and 12 weeks, while venous stasis from prior uterine compression and endothelial injury during childbirth or from local infection further contribute to thrombotic risk. Consequently, the risk of venous thromboembolism remains significantly elevated throughout the postpartum period, with the highest incidence occurring within the first six weeks.⁷

Imaging is critical for a definitive diagnosis. While Doppler ultrasonography is a common first-line test due to its lack of radiation, its sensitivity is variable and can be limited by patient body habitus and bowel gas.⁸ Contrast-enhanced CT is the imaging modality of choice, offering high sensitivity and specificity (approaching 100%), and is superior for evaluating thrombus extension and complications like PE. MRI serves as an excellent radiation-free alternative with similar diagnostic accuracy.⁹

The management of postpartum OVT centers on anticoagulation. Recommendations suggest a minimum of six weeks to three months of therapeutic anticoagulation therapy, with low-molecular-weight heparin being the preferred option because of its effectiveness and safety profile following childbirth.^{10,11} The use of antibiotics as a standard treatment is a subject of ongoing discussion; nonetheless, they are often prescribed in the early stages largely due to their historical association with septic pelvic thrombophlebitis, especially when the infectious source cannot be eliminated.¹²

This case underscores a key clinical lesson: OVT must be considered in the differential diagnosis for any postpartum patient with unexplained abdominal pain, even without classic signs of infection. Prompt recognition and imaging, with subsequent immediate anticoagulation, are crucial for achieving a favorable outcome and preventing potentially life-threatening thromboembolic events. Published data on ovarian vein thrombosis from low-resource settings, including Somalia, remain extremely limited. Reporting such cases contributes to the global understanding of postpartum thrombotic complications and highlights the need for improved diagnostic awareness and the optimal duration of anticoagulation use in resource-constrained healthcare systems.

Ethical Approval

Ethical approval was not required from the study site, Hodan Hospital in Mogadishu, Somalia, for publication of a single-patient case report. However, written informed consent for this case publication was obtained from the patient.

Informed Consent

The patient provided written informed consent for the publication of their medical care details and any associated images.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors have no conflicts of interest to declare in this work.

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