

Case Report

Postpartum Ovarian Vein Thrombosis Mimicking Endometritis: A Case Report

Michael Roche^{1*}, Anna McCormick², and Xavier Pombar³

¹Department of Obstetrics and Gynecology, Penn State Hershey Medical Center, USA

²Department of Obstetrics and Gynecology, Division of Maternal Fetal Medicine, Medical College of Wisconsin, USA

³Department of Obstetrics and Gynecology, Division of Maternal Fetal Medicine, Rush University Medical Center, USA

***Corresponding author:** Michael Roche, MD; Department of Obstetrics and Gynecology, Penn State Hershey Medical Center, Hershey, PA 17033, USA, Tel: 708-834-4097; Fax: 717-531-0066; E-mail: michael.r.roche@gmail.com

Received: December 28, 2017; **Accepted:** January 15, 2018; **Published:** January 22, 2018

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Citation: Roche M, McCormick A, Pombar X (2017) Postpartum Ovarian Vein Thrombosis Mimicking Endometritis: A Case Report. Case Rep Lit Rev 2(1): 100003.

Abstract

Background: Ovarian vein thrombosis is rare in pregnant and postpartum women.

Case: A 32-year-old female presented 13 days following a vaginal delivery with a two-day history of fevers, right flank and suprapubic pain. She was diagnosed with endometritis, treated with antibiotics, and sent home. She returned two days later and with abdominal pain. Subsequent imaging revealed right ovarian vein thrombosis. She was started on antibiotics and anticoagulation. Thrombophilia workup was positive for Factor V Leiden heterozygous mutation.

Conclusion: Ovarian vein thrombosis may present in postpartum patients and can mimic endometritis or acute abdomen. High clinical suspicion is necessary to make the diagnosis, and subsequent testing should include full thrombophilia workup.

Keywords: ovarian vein thrombosis, thrombophilia, postpartum

Introduction

Ovarian vein thrombosis is a rare, potentially serious complication associated with conditions such as malignancy, pelvic inflammatory disease and recent surgery. It is also a rare complication of pregnancy, affecting between 0.05% and 0.18% of patients [1]. Patients typically present with lower abdominal pain, fever and leukocytosis. The differential diagnosis is broad, and data regarding this condition is scarce; therefore, a high clinical suspicion is necessary to diagnose ovarian vein thrombosis. Ultrasound, computed tomography, or magnetic resonance imaging is used to make the diagnosis [2]. Prompt treatment is important to prevent progression to pulmonary embolism or sepsis [1]. These patients should be worked up for possible thrombophilias.

We present a case in which ovarian vein thrombosis was initially misdiagnosed as postpartum endometritis following a vaginal delivery.

Case Report

A 32-year-old G5P2032 female underwent an uncomplicated vaginal delivery of a 3,840-gram female at 38 3/7 weeks gestational age. Her postpartum course was unremarkable, and she was discharged home on postpartum day one. She returned to the hospital on postpartum day thirteen with a two-day history of fevers, right flank and suprapubic pain, and foul smelling vaginal discharge. She had fundal tenderness on exam, and her leukocyte count was 9,570 units/mL. A diagnosis of presumed postpartum endometritis was made, and intravenous antibiotics were started. She was afebrile for greater than 24 hours, and her pain improved. She was discharged home on hospital day two.

The patient returned one day later with persistent fevers, chills, and myalgias. She was afebrile, and physical exam was significant for tenderness along the right flank with no rebound or guarding. Intravenous ampicillin, tobramycin, and metronidazole were started for broad spectrum coverage of endometritis with suspected resistance to prior therapy. Due to persistent abdominal tenderness, a computed tomography scan of the abdomen and pelvis was ordered on hospital day one, which showed right ovarian vein thrombosis (Figures 1 and 2). Intravenous antibiotics were continued, and the patient was started on a heparin drip. Her clinical status improved, and she was discharged home on hospital day four on enoxaparin for two weeks and amoxicillin-clavulanic acid for five additional days. At the patient's postpartum visit, she underwent a thrombophilic workup that was positive for Factor V Leiden heterozygous mutation.



Figure 1: Coronal computed tomography showing inflammation surrounding the right ovarian vein indicative of ovarian vein thrombosis (arrows).

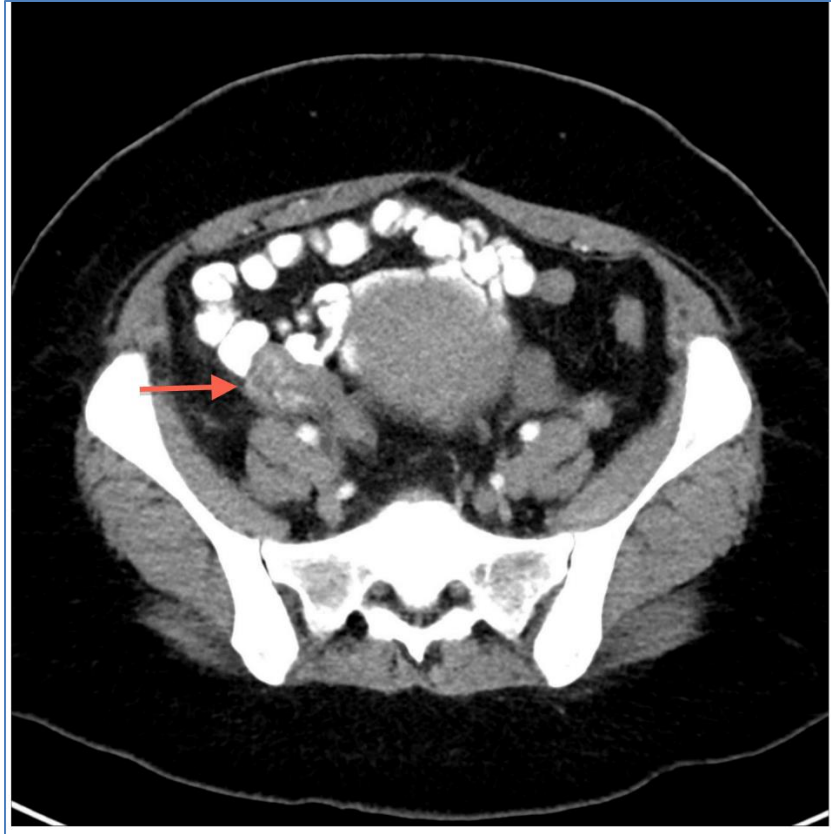


Figure 2: Transverse computed tomography showing inflammation surrounding the right ovarian vein indicative of ovarian vein thrombosis (arrows).

Discussion

Ovarian vein thrombosis is a rare complication in the postpartum period. The first case of ovarian vein thrombosis was described by Austin in 1956 [3]. During pregnancy, women are five times more likely to suffer from a thromboembolic event [4]. Virchow's Triad of endothelial injury, venous stasis and a hypercoagulable state describes the pathophysiology of thromboembolic events. Endothelial injury can occur during delivery or from local inflammation. As the enlarging uterus compresses the inferior vena cava, venous stasis occurs in the pelvic veins and lower extremities [1]. Pregnancy is a hypercoagulable state due to an increase in clotting factors VII, VIII, X, XII and von Willebrand factor. Additionally, fibrinogen levels during later stages of pregnancy often increase to over 600 mg/dl [5]. Thrombophilic states such as the presence of factor V Leiden, Prothrombin G20210A mutation, systemic lupus erythematosus, antiphospholipid syndrome, protein C and S deficiency and heparin-induced thrombocytopenia are all predisposing risk factors for ovarian vein thrombosis [6]. The right ovarian vein is affected 80-90% of cases, likely because of dextro-rotation of the enlarging uterus causing compression of the right ovarian vein and ureter as they cross the pelvic brim, retrograde drainage from the left ovarian vein and anterograde flow into the right ovarian vein. When dilated, the valves become incompetent and are a nidus for thrombus formation [7].

Patients with postpartum ovarian vein thrombosis often present with fever, lower abdominal pain and a palpable abdominal mass. They typically present between two and fifteen days postpartum. Diagnosis is often missed, and the condition is often initially treated as endometritis. Symptoms may persist despite adequate antibiotic

coverage [1,7]. The patient presented in the case above was afebrile at presentation, however reported subjective fevers at home, along with abdominal and flank pain. Persistent symptoms and a high clinical suspicion are necessary to make the diagnosis of OVT.

Ultrasound is the diagnostic modality of choice as it is inexpensive and readily available. However, it is operator dependent and has a low specificity (52%). If ultrasound is negative and clinical suspicion is still high, further workup should be done using magnetic resonance imaging or computed tomography. Computed tomography has a specificity of 100% and a sensitivity of 99%, while MRI has a specificity of 92% and a sensitivity of 100% [6].

Treatment involves broad-spectrum antibiotics and anticoagulation. Antibiotic agents such as second- or third-generation cephalosporin antibiotics are indicated to treat ovarian vein thrombosis. Also appropriate are clindamycin and gentamicin, imipenem and cilastatin, and ampicillin-sulbactam [2]. Anticoagulation with heparin or low molecular weight heparin is also indicated. No consensus recommendation exists regarding length of treatment due to the rarity of the condition. Antibiotics are often continued until the patient is afebrile for 48 hours, while anticoagulation treatment length varies [7,8].

Morbidity of ovarian vein thrombosis is due to the potential for migration of the thrombus to more proximal veins, pulmonary embolism (PE) and sepsis. The incidence of PE from ovarian vein thrombosis is 13.2%. Mortality due to ovarian vein thrombosis is 5% and most commonly due to PE. Once symptoms resolve, a thrombophilic work up should be performed [7]. The presence of heterozygous factor V Leiden mutation increases the risk of thrombosis seven times versus the normal population, while a homozygous mutation confers an 80-times increased risk [9].

References

1. Arkadopoulos N (2011) Ovarian Vein Thrombosis Mimicking Acute Abdomen: A Case Report and Literature Review. *World J Emerg Surg* 6: 45.
2. Kominiarek MA, Hibbard JU (2006) Postpartum ovarian vein thrombosis: an update. *Obstet Gynecol Surv* 61: 337-342.
3. Austin OG (1956) Massive thrombophlebitis of the ovarian veins. *Am J Obstet Gynecol* 72: 428-429.
4. National Institutes of Health (1986) Prevention of venous thrombosis and pulmonary embolism. NIH Consensus Development. *JAMA* 256: 744-749.
5. Choi JW, Pai SH (2002) Tissue plasminogen activator levels change with plasma fibrinogen concentrations during pregnancy. *Ann Hematol* 81: 611-615.
6. Salomon O, Apter S, Shaham D, Hiller N, Bar-Ziv J, et al. (1999) Risk factors associated with postpartum ovarian vein thrombosis. *Thromb Haemost* 82: 1015-1019.
7. Sinha D, Yasmin H, Samra JS (2005) Postpartum inferior vena cava and ovarian vein thrombosis: a case report and literature review. *J Obstet Gynaecol* 25: 312-313.
8. Basili G, Romano N, Bimbi M, Lorenzetti L, Pietrasanta D, et al. (2011) Postpartum ovarian vein thrombosis. *JSLs* 15: 268-271.
9. Rosendaal FR, Koster T, Vandenbroucke JP, Reitsma PH (1995) High risk of thrombosis in patients homozygous for factor V Leiden (activated protein C resistance) *Blood* 85: 1504-1508.