

Postpartum ovarian vein thrombophlebitis: Report of a case and review of the literature

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Abstract

Context: Postpartum ovarian vein thrombophlebitis is an uncommon life-threatening situation. It should be systematically evoked in case of persistent fever during the postpartum. Diagnosis is often not immediately apparent clinically and there are many that mimic this condition. **Case Report:** A 26-year-old female presented with fever and acute right loin pain during four days after delivery. Right ovarian venous thrombosis was demonstrated on sonography and confirmed with computed tomography. The patient was given antibiotics and anticoagulation therapy with good response. **Conclusion:** Search for postpartum ovarian vein thrombophlebitis should be undertaken in patients with persistent fever. Treatment is more often medical.

Keywords: Thrombophlebitis, ovarian vein, post-partum

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Introduction

Ovarian vein thrombosis is an uncommon but potentially serious disorder that is associated with a variety of pelvic conditions most notably in a postpartum, but also pelvic inflammatory disease, malignancies, and pelvic surgery. Recognition and treatment of this condition is needed to avoid the morbidity and mortality that are related both to the thrombosis and to any associated infection/sepsis. We report a case of postpartum ovarian vein thrombophlebitis (POVT) presenting as fever and right loin pain.

Case Report

A 26 year-old lady, Para 2, underwent a spontaneous vaginal delivery complicated with a partial placental retention treated by a uterine revision. Her postpartum course was uneventful until the fourth day, when she complained of fever and right-flank pain with nausea and

vomiting. Clinical examination revealed a temperature of 39°C and right lower quadrant tenderness, no masses were detected. Heart sound was normal and there was no murmur detected. A pelvic examination revealed a nontender uterus and normal lochia. The calf were soft. Laboratory analysis showed a leucocytosis of 18000 cells/mm³ and a protein C-reactive (CRP) level of 163 mg/L.

The pelvic and abdominal sonography was limited by the presence of overlying bowel gas. Abdominal computed tomography (CT) with intravenous contrast (Figures 1, 2) revealed a right ovarian vein thrombosis extending to the inferior vena cava without a floating thrombus. A CT scan of the chest eliminate a pulmonary embolism. Anticoagulation therapy with heparin was initiated along with intravenous administration of metronidazole. The patient's leukocytosis and fever resolved within two days. After one week it was stopped and oral coumarin was

continued with an efficient contraception. The patient was discharged home by the tenth day in good condition. At follow-up 6 months later, she had not experienced recurrence of her symptoms while being maintained on oral therapeutic anticoagulation.



Fig. 1 Contrast-enhanced abdominal and pelvic CT scan (transversal view) showed heterogeneous structure beside the right wall of the uterus (thrombosis of the right ovarian vein) (red arrow).



Fig. 2 Abdominal CT scan showed right ovarian vein thrombosis extending to the inferior vena cava without a floating thrombus (red arrow).

Discussion

Ovarian vein thrombophlebitis is a rare pathology [4] mostly described in puerperal state [1-3, 5]. It arises out of the coincident conditions of venous stasis and hypercoagulability, which are commonly present in the recently postpartum patient. Other conditions that are associated with hypercoagulability, such as recent surgery, malignancy and Crohn's disease also increase the patient's risk for ovarian vein thrombosis [1, 5, 6]. Post partum ovarian thrombophlebitis (POVT) occurs in 1/2000 to 1/600 of pregnancies and 1/800 of caesarean [2, 3, 5-7]. The five cases reported by Hafsa [1] and 8 cases of 9 by Ranchoup's series have complicated a surgical pregnancy [8].

It can follow a term pregnancy, a premature delivery, an abortion or an ectopic pregnancy. It is diagnosed on the right side in 80-90% of the affected postpartum patients.

The pathophysiology of POVT is related to the Virchow triad: the venous stasis and hypercoagulability that commonly accompany the puerperium with superimposed injury to the vein wall usually caused by uterine infection [3, 6]. In fact, pregnancy is a hypercoagulate state in which there is increased platelet adhesion and decreased fibrinolysis coupled with increasing levels of factors particularly the fibrinogen, factor VIII and Will Brand factor (VWF). In addition to these modifications which limit maternal blood loss at delivery, the relative venous stasis at the vena cava due to uterine compression can predispose pregnant women to thromboembolism [6, 9].

Approximately 90% of the cases reported were unilateral and right-sided [1, 6, 8, 11]. Several physiologic and anatomic factors are mentioned. We insist on two reasons: compression of the right ovarian vein at the pelvic brim by the enlarged uterus and a retrograde flow in the left ovarian vein that protects it against ascending infection [1, 3, 6]. The puerperal infection occurs in 45% to 67% of cases [7] due to instrumentation or uterine manipulation at delivery like our patient [2, 6, 7, 10].

The symptoms usually presents in the first postpartum week as a syndrome consisting of pelvic pain, fever and a right-sided abdominal mass [1, 2, 6-8]. However, several other entities, including pyelonephritis, tubo-ovarian abscess, broad ligament hematoma and appendicitis may present with similar symptoms [1, 6]. Many patients are asymptomatic and others may be diagnosed incidentally during coelioscopy or in etiology workup of pulmonary embolism [6, 12]. The inflammatory biological syndrome (leucocytosis, high CRP level) is constant and microbiological laboratory analysis are usually sterile [1, 6]. Radiological modalities for making the diagnosis include sonography, computed tomography (CT) and magnetic resonance imaging (MRI).

The ultrasonography study coupled with Doppler examination is a non-invasive test, less expensive and requires no contrast material. It can delineate the location and extent of the thrombus because of the ease of imaging in any plane. However, overlying bowel gas may limit visualisation in ultrasound, which oftentimes causes the operator to confuse with the appendix or hydroureter. Sonography may have a role for follow-up imaging in patients previously diagnose with the condition [2, 6-8]. Investigation with CT or MR imaging are more sensitive (100% and 92%) and specific (99% and 100%) [6, 8]. CT findings of venous thrombosis are a tubular retroperitoneal mass with central low attenuation extending cephalad to the inferior vena cava (IVC). A delayed scan done during the excretory phase of the kidneys would be useful to differentiate a ureter from the ovarian vein. As our patient, the CT scan was important to confirm the diagnosis and to demonstrate the extension to the IVC.

MR findings are similar to those of CT, on T1 and T2 weighted images the ovarian vein thrombus is seen as an

enlarged structure that has relatively higher signal than the surrounding inflammatory mass. The IVC thrombus has a complex appearance with both central and peripheral low-intensity zones and an intervening zone of moderate intensity, approximately equal to that of surrounding inflammatory mass [13, 14].

Complications of ovarian vein thrombosis are more common in the postpartum period, it can result in sepsis; thrombosis of the inferior vena cava and renal veins, which can lead to pulmonary embolism (25%); and death (5% of complicated cases, with an estimated 18 deaths per million pregnancies).

The treatment of choice is the combination of anticoagulant and intravenous (IV) antibiotic therapy. The duration of anticoagulation therapy is controversial. Resolution of ovarian vein thrombosis has been documented after only 7 to 14 days of therapy. Others have shown that 3 to 6 months is indicated until there is radiologically confirmed resolution of the thrombus [1, 2, 5-7].

In cases of clinically significant thrombosis or inefficiency of medical therapy within 5 days [1, 7] surgical treatment is indicated, inferior vena cava (IVC) filter placement, thrombectomy or the ligation of the ovarian vein should be considered [10].

Conclusion

Ovarian vein thrombosis (OVT) is a rare but serious postpartum complication that, in most cases, occurs in the right ovarian vein. Clinical signs are often misleading but the correct diagnosis can now be made by CT scanning, although other imaging techniques, such as color Doppler ultrasonography and magnetic resonance imaging are useful. Heparin and intravenous antibiotics are the mainstay of treatment so as to avoid laparotomy.

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