



DILEMMAS IN MANAGEMENT OF POSTPARTUM OVARIAN VEIN THROMBOSIS- A REVIEW

Obstetrics & Gynaecology

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ABSTRACT

Ovarian vein thrombosis is a rare condition that occurs within few days postpartum, affecting 1 in 500 to 1 in 2000 women. Predisposing factors include pregnancy, surgical delivery, malignancies, pelvic infections and prothrombotic states, but in 16% cases it can be idiopathic. The common presenting symptoms are abdominal pain, tenderness, fever and sometimes a palpable abdominal mass. Complications of symptomatic Ovarian vein thrombosis can be fatal. Treatment with short duration of anticoagulation and antibiotics leads to a favorable outcome. In 30% cases it is asymptomatic and detected incidentally on imaging studies. The aim of our review is to highlight the fact that clinicians should maintain a high index of suspicion for this condition in postpartum women and differentiate symptomatic Ovarian vein thrombosis from benign, incidental condition in order to institute timely and appropriate management. A flow chart to aid clinicians in the management of postpartum Ovarian vein Thrombosis is presented.

KEYWORDS

Ovarian vein thrombosis, postpartum, complications, risk factors, anticoagulation.

INTRODUCTION AND BACKGROUND

Ovarian Vein thrombosis (OVT) is a rare but serious type of thromboembolic condition in an unusual site, that complicates approximately 0.01% to 0.05% of all deliveries, with a higher incidence observed after cesarean sections [1]. Risk factors include Pregnancy, delivery by cesarean section, malignancies mainly genitourinary, breast and pancreatic cancers, Inflammatory conditions like pelvic inflammatory disease and Inflammatory bowel disease, gynecologic pelvic surgeries and thrombophilias mainly Antiphospholipid syndrome, factor V Leiden mutation or Protein S deficiency [2]. In 4-16% cases it is idiopathic [3].

Postpartum ovarian vein thrombosis (OVT) is usually observed in the first 4 weeks after childbirth, most commonly in first 10 days [4]. It is characterized by the formation of a blood clot in the ovarian vein, which can lead to significant complications if not promptly diagnosed and treated [1].

Pathophysiology

OVT is thought to be a result of venous stasis, endothelial damage and the increased circulation of clotting factors in the postnatal period. The condition is more frequently diagnosed on the right side due to anatomical factors [4]. Right sided OVT is seen in 70-90% cases, followed by bilateral OVT and least commonly, left sided OVT. This is explained by the facts that Uterus is dextro rotated in pregnancy, compressing the right gonadal vein, favoring stasis, secondly the right ovarian vein is longer than the left and lacks competent valves, allowing antegrade blood flow, stasis and development of bacterial infection. Thirdly the right ovarian vein enters inferior vena cava at an acute angle, predisposing it to compression again. The left gonadal vein enters left renal vein at right angle, allowing retrograde flow, prevents stasis and ascending infection and hence less at risk of thrombosis. [1,2]

Clinical Presentation

Patients with OVT typically present with lower abdominal pain and fever within the first few weeks postpartum [5]. OVT should be suspected in any postpartum patient with right quadrant lower abdominal pain and puerperal pyrexia if there is no response to antibiotics. Other symptoms may include chills, nausea, and a palpable abdominal mass. OVT should be a differential diagnosis in women presenting with abdominal pain even outside the postpartum period [6]. Differentials include acute appendicitis, adnexal abscess, endometritis, ovarian torsion, uterine broad ligament hematoma and other acute abdominal diseases [7]. Patients may undergo unnecessary Laparotomy or Laparoscopy for acute abdomen if OVT is not suspected. 30% cases of OVT are incidentally detected on imaging carried out for other conditions.

Complications of untreated OVT include sepsis, extension of the thrombus to the inferior vena cava (IVC) or renal veins, renal obstruction, pulmonary embolism (PE), uterine necrosis, and ureteral compression. Even asymptomatic post-partum OVT can lead to pulmonary embolism [8]. Prompt diagnosis and treatment are crucial to prevent these potentially life-threatening outcomes [1].

Diagnosis

The diagnosis of OVT is primarily based on clinical suspicion and confirmed through imaging studies such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI) [1,2]. Ultrasound doppler is used as first line method for imaging due to safety, low cost and ease of availability, but the ovarian veins can be obscured by bowel gases and maternal obesity. So, CT with contrast is employed to confirm presence of thrombus. CT and MRI are particularly useful in identifying the extent of the thrombus and any associated complications [9]. Pelvic MRI has the highest sensitivity and specificity for diagnosis of OVT.

MANAGEMENT

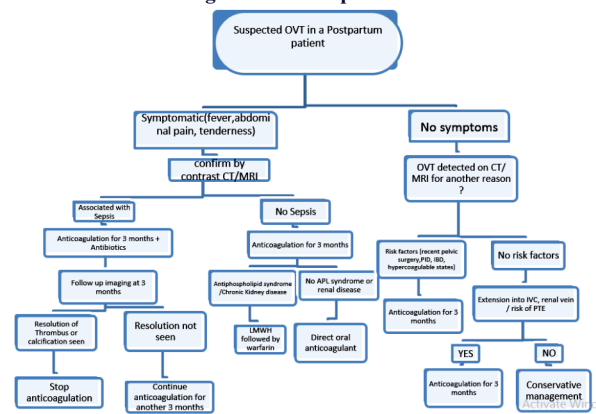
The management of OVT remains a subject of debate. There is conflicting evidence about management, especially the type of anticoagulant, duration of treatment and length of follow up. There is also the dilemma if Incidental and asymptomatic OVT should have any intervention. Good quality guideline for management of postpartum OVT are lacking. The condition can be managed conservatively, medically or rarely surgically. Medical management mainly involves use of anticoagulants and antibiotics. Anticoagulation therapy which is commonly used to prevent thrombus extension and pulmonary embolism include low molecular weight heparin (LMWH), warfarin and Direct oral anticoagulants (Apixaban, rivaroxaban) [10]. LMWH is preferred in lactating women due to non-excretion in breast milk [7].

If antiphospholipid syndrome is suspected, then use of warfarin is recommended until the condition is confirmed or excluded. The British society for hematology guideline for investigation and management of thromboembolism in unusual sites, recommends short duration of therapy of 3 to 6 months for postpartum OVT [11]. However, the duration and intensity of anticoagulation therapy can vary depending on the clinical assessment and if the episode of thrombosis was provoked or unprovoked. In some cases, antibiotics need to be administered if there is a suspicion of infection. No anticoagulation is recommended for incidentally detected cancer associated OVT. The use of thrombolytics (urokinase, alteplase) has been reported only in few studies and they should be reserved for women with massive thrombosis, due to the high risk of bleeding. Retrievable inferior vena cava filters are used only when there are absolute contraindications to

the anticoagulant treatment such as active bleeding or imminent surgery [3].

Surgical treatments used for OVT in past but no longer favored in present times include-thrombectomy, ovarian vein ligation /excision, hysterectomy and inferior vena cava ligation.

Flow Chart For Management Of Postpartum OVT



Outcome and Recurrence

Mortality related to OVT is low in current times due to combination treatment with parenteral broad-spectrum antibiotics (Ampicillin sulbactam, Piperacillin-tazobactam or ceftriaxone plus metronidazole) until 48 hours after fever resolution and anticoagulation for 3 to 6 months. Anticoagulation is associated with low rates of major bleeding and recurrence. [12]. Some studies suggest repeating imaging after 3 months and stopping anticoagulation if the resolution of thrombus or calcification is noted on follow-up imaging. Sequelae encountered during follow up period were lower extremity DVT in 17%, pelvic congestion syndrome in 13% and recurrent venous thrombosis in contralateral ovarian vein, left renal vein or IVC in 3% cases [13]. The average duration for follow up to detect recurrence was 24 months [4]. There are no large-scale studies addressing effect of OVT on ovarian function or fertility and duration of follow up in cases with Anticoagulation treatment or conservative management.

CONCLUSION

Postpartum OVT is a rare but serious condition that requires a high index of suspicion for diagnosis. Due to the non-specific presenting clinical features, there is potential for missed diagnosis or underdiagnosis of OVT, exposing patients to unnecessary surgical interventions for acute abdomen. Medical treatment with anticoagulants and antibiotics carries good prognosis and is required only if the OVT is symptomatic, associated with sepsis or another deep venous thrombosis. Anticoagulation using low molecular weight heparin for at least 3 months results in a high remission rate. Anticoagulation is not compulsory for an incidentally detected OVT. well-designed randomized controlled trials are needed in future to establish the diagnosis and treatment guidelines for Postpartum OVT.

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