

## **Management of Postpartum Venous Thrombosis**

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### **Abstract**

Deep vein thrombosis stands for deep vein thrombosis, a condition where blood clots form in the deep veins of the body, typically in the legs. It can be serious because if a clot breaks loose, it can travel through the bloodstream and lodge in the lungs, causing a pulmonary embolism, which can be life-threatening. This case report underscores the importance of a multidisciplinary approach involving obstetricians, hematologists, and other healthcare providers in the management of postpartum venous thrombosis to ensure optimal outcomes for both the mother and infant. In conclusion, postpartum deep vein thrombosis (DVT) is a potentially serious complication that requires prompt recognition and management to prevent morbidity and mortality. This case underscores the importance of maintaining a high index of suspicion for venous thromboembolism (VTE) in postpartum women, particularly those with risk factors such as immobility, cesarean delivery, or a personal or family history of thrombosis. Early diagnosis of postpartum DVT through clinical assessment and appropriate diagnostic testing, such as Doppler ultrasound, is crucial for timely intervention. Treatment typically involves anticoagulation therapy to prevent clot propagation, reduce the risk of complications, and promote resolution of thrombus.

**Keywords:** deep vein thrombosis, postpartum, management

### **Introduction**

Deep vein thrombosis stands for deep vein thrombosis, a condition where blood clots form in the deep veins of the body, typically in the legs. It can be serious because if a clot breaks loose, it can travel through the bloodstream and lodge in the lungs, causing a pulmonary embolism, which can be life-threatening.

Postpartum deep vein thrombosis (DVT) is a serious and potentially life-threatening complication that can occur following childbirth. It is a serious condition that can lead to complications such as deep vein thrombosis (DVT) or pulmonary embolism (PE). The postpartum period presents a higher risk for venous thrombosis due to various factors, including changes in blood clotting mechanisms, reduced mobility after delivery, and potential damage to blood vessels during childbirth. [1]

The postpartum period is associated with a significantly increased risk of thromboembolic events, with DVT being one of the most common complications. The incidence of postpartum DVT varies widely but is estimated to occur in approximately 1 to 2 per 1,000 deliveries.

### **Risk factors for postpartum venous thrombosis include**

- **History of Venous Thromboembolism (VTE):** Women with a previous history of VTE are at increased risk of recurrence during the postpartum period.

- **Cesarean Section:** Women who undergo cesarean delivery have a higher risk of venous thrombosis compared to those who have vaginal deliveries.
- **Prolonged Immobility:** Reduced mobility during and after childbirth increases the risk of blood clot formation.
- **Obesity:** Obesity is a significant risk factor for venous thrombosis.
- **Multiparity:** Women who have had multiple pregnancies are at higher risk.
- **Age:** Advanced maternal age is associated with an increased risk of venous thrombosis.
- **Smoking:** Smoking is a known risk factor for venous thromboembolism.
- **Medical Conditions:** Certain medical conditions such as thrombophilia, autoimmune disorders, and cancer increase the risk of venous thrombosis.
- **Use of Hormonal Contraceptives:** Hormonal contraceptives, especially combined oral contraceptives containing estrogen, can increase the risk of blood clots.
- **Inherited Disorders:** Genetic factors, such as Factor V Leiden mutation or prothrombin gene mutation, can predispose individuals to venous thrombosis.

## Case Report

### Patient Information

**Age:** 32

**Gestational Age at Delivery:** 38 weeks

**Mode of Delivery:** Vaginal delivery

**Medical History:** No significant medical history, no prior history of thromboembolic events.

**Obstetric History:** Normal vaginal delivery with episiotomy, no complications during labor and delivery.

**Social History:** Non-smoker, no history of substance abuse, married, works as a teacher.

### Clinical Presentation

The clinical presentation of postpartum DVT is similar to that of DVT occurring outside of pregnancy and includes unilateral leg pain, swelling, warmth, redness, and palpable cord-like veins. However, the diagnosis may be challenging due to the overlap of symptoms with common postpartum complaints such as leg pain and swelling.

A 32-year-old woman, presented to the emergency department 5 days postpartum with complaints of left leg pain, swelling, and warmth. She reported no prior history of thromboembolic events, and her pregnancy had been uncomplicated.

### Physical Examination

- **General:** Patient appears fatigued but otherwise well-nourished and in no acute distress.
- **Vital Signs:** Blood pressure 120/80 mmHg, heart rate 85 bpm, respiratory rate 16 breaths/min, temperature 37°C.
- **Cardiovascular:** Regular rate and rhythm, no murmurs.

- **Respiratory:** Clear breath sounds bilaterally, no signs of respiratory distress.
- **Abdomen:** Soft, non-tender, no palpable masses.
- **Extremities:** Left lower extremity shows significant swelling, erythema, and warmth compared to the right side. Positive Homan's sign (calf pain with dorsiflexion of the foot), palpable cord-like structure along the course of the left posterior tibial vein, no edema or erythema in the right lower extremity.

### **Diagnostic Workup**

- **Ultrasound Doppler:** Confirmed the presence of left lower extremity deep vein thrombosis (DVT), involving the popliteal and femoral veins.
- **Laboratory Tests:** Complete Blood Count (CBC): Within normal limits.
- **Coagulation profile:** Prothrombin time (PT), activated partial thromboplastin time (aPTT), and international normalized ratio (INR) within normal limits.
- **D-dimer:** Elevated, consistent with acute thrombosis.
- **Imaging:** Chest X-ray to rule out pulmonary embolism (PE) due to the risk of clot migration. No evidence of acute cardiopulmonary abnormalities.[2]

### **Diagnosis**

Postpartum deep vein thrombosis (DVT) in the left lower extremity.

### **Management**

Patient was promptly started on therapeutic anticoagulation with subcutaneous enoxaparin (LMWH) at a dose of 1 mg/kg twice daily. She was also fitted with compression stockings for the affected leg. Pain management was achieved with analgetics.[3]

**Anticoagulant Therapy:** This is the cornerstone of treatment for venous thrombosis. Medications like heparin or low molecular weight heparin (LMWH) are commonly used initially, followed by oral anticoagulants like warfarin or direct oral anticoagulants (DOACs) for long-term management. The choice of anticoagulant depends on various factors including the severity of the thrombosis, patient preference, and any contraindications.

**Compression Therapy:** Wearing compression stockings can help reduce the risk of post-thrombotic syndrome (PTS) and alleviate symptoms associated with DVT, such as swelling and pain.

**Activity and Mobility:** Encouraging early mobilization and regular movement helps prevent stasis of blood in the veins, reducing the risk of further thrombosis and promoting recovery.

**Monitoring:** Close monitoring of the patient's condition is essential, particularly during the initial phase of treatment when the risk of thrombus propagation or embolization is highest.

**Pain Management:** Analgesics may be prescribed to manage pain associated with DVT.

**Patient Education:** Providing education about the condition, the importance of compliance with medications, signs of recurrence, and measures to prevent future thrombotic events is crucial for long-term management.

**Follow-up:** Regular follow-up controls are necessary to monitor the patient's response to treatment, adjust medications if needed, and assess for any complications.

**Breastfeeding Considerations:** When selecting anticoagulant therapy for breastfeeding mothers, medications that are compatible with breastfeeding should be chosen to minimize the risk of harm to the infant.

**Thrombophilia Screening:** In cases of unprovoked or recurrent thrombosis, thrombophilia screening may be considered to identify underlying genetic or acquired predisposing factors.

**Multidisciplinary Approach:** Management often involves a multidisciplinary team including obstetricians, hematologists, and primary care physicians to ensure comprehensive care.

**Prophylaxis in Future Pregnancies:** Women with a history of postpartum venous thrombosis may require prophylactic anticoagulation during future pregnancies and the postpartum period to reduce the risk of recurrence.

**Psychological Support:** Dealing with venous thrombosis during the postpartum period can be emotionally challenging. Providing psychological support and resources for coping can be beneficial for the patient's overall well-being.

These management strategies aim to effectively treat the acute thrombotic event, prevent recurrence, and minimize long-term complications, ensuring the optimal health and safety of both the mother and child.

**Follow-up:** Symptoms improved over the next few days with anticoagulation and supportive measures. She was discharged on a therapeutic dose of enoxaparin with instructions for regular follow-up appointments.

**Long-term Management:** At her follow-up appointment 2 weeks later, symptoms had resolved, and she was transitioned to an oral anticoagulant, rivaroxaban, for long-term management. She was educated about the importance of compliance with medication and the signs of recurrence. Given her history of postpartum venous thrombosis, she was advised on the need for prophylactic anticoagulation during any future pregnancies and the postpartum period.

Postpartum venous thrombosis is a serious complication that requires prompt diagnosis and management. This case highlights the importance of a high index of suspicion for DVT in postpartum women presenting with leg pain and swelling. Prompt initiation of anticoagulation therapy is crucial to prevent thrombus propagation and reduce the risk of complications such as pulmonary embolism and post-thrombotic syndrome.

## **Conclusion**

This case report underscores the importance of a multidisciplinary approach involving obstetricians, hematologists, and other healthcare providers in the management of postpartum venous thrombosis to ensure optimal outcomes for both the mother and infant. In conclusion, postpartum deep vein thrombosis (DVT) is a potentially serious complication that requires prompt recognition and management to prevent morbidity and mortality. This case underscores the importance of maintaining a high index of suspicion for venous thromboembolism (VTE) in postpartum women, particularly those with risk factors such as immobility, cesarean delivery, or a personal or family history of thrombosis. Early diagnosis of postpartum DVT through clinical assessment and appropriate diagnostic testing, such as Doppler ultrasound, is crucial for timely intervention. Treatment typically involves anticoagulation therapy to prevent clot

propagation, reduce the risk of complications, and promote resolution of thrombus. Additionally, patient education and counseling play a pivotal role in ensuring adherence to anticoagulant therapy, promoting measures to reduce the risk of recurrence, and empowering women to recognize and promptly report symptoms of VTE or complications. As healthcare providers, it is imperative to remain vigilant for postpartum DVT, provide comprehensive care, and collaborate closely with obstetricians, hematologists, and other specialists to optimize outcomes for women during this vulnerable period. Through vigilant monitoring, effective management, and patient education, the risk of morbidity and mortality associated with postpartum DVT can be minimized, ultimately promoting the health and well-being of postpartum women and their newborns. [4]

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