DOI: 10.7860/JCDR/2025/77873.20820

Case Report

Obstetrics and Gynaecology Section

Management of Postpartum Deep Vein Thrombosis with Inferior Vena Cava Filter Placement: A Case Report

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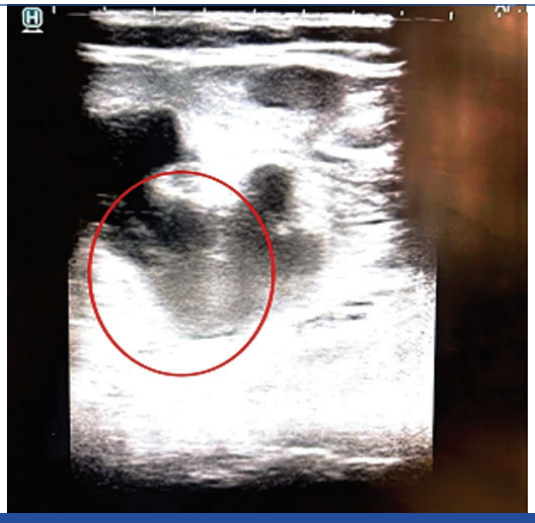
ABSTRACT

After caesarean sections, Deep Vein Thrombosis (DVT) is a serious complication that increases the risk of maternal morbidity and mortality. Immobility, obesity, thrombophilia and emergency caesarean sections are additional risk factors that can lead to the development of DVT. Symptoms of DVT include oedema, pelvic and lower limb pain and unilateral leg swelling. The primary purpose of Inferior Vena Cava (IVC) filters is to prevent blood clots from entering the lungs, where they can cause a potentially fatal pulmonary embolism. The placement of an IVC filter can be a crucial intervention to protect maternal health in the setting of postoperative DVT, where the risk of embolism is increased. In this case, a 27-year-old multiparous woman underwent an emergency caesarean section for foetal distress and developed unilateral pedal oedema postoperatively. A venous Doppler confirmed acute DVT in the right lower limb. She was managed with IVC filter placement, mechanical thrombectomy, thrombolysis and anticoagulation therapy. Comprehensive postoperative care included antibiotics, analgesics, physiotherapy and supervised mobilisation, ensuring safe breastfeeding under the guidance of neonatology. Regular wound care revealed healthy healing and the patient demonstrated complete recovery without complications. This case underscores the importance of early diagnosis, multidisciplinary management and vigilance in addressing postpartum DVT to prevent life-threatening complications.

Keywords: Caesarean section, Low molecular weight heparin, Pregnancy, Venous doppler

CASE REPORT

A 27-year-old multiparous woman (G2, P1, L1) was admitted to the tertiary care hospital with a term pregnancy in the latent phase of labour, accompanied by foetal distress, for which an emergency caesarean section was performed. She had a previous history of a Lower Segment Caesarean Section (LSCS) six years ago. After the surgery, the patient was shifted to the Intensive Care Unit (ICU). On examination, unilateral pedal oedema was observed on the second postoperative day. A venous Doppler of the right lower limb suggested an acute echogenic thrombus in the Common Femoral Vein (CFV) and Saphenofemoral Vein (SFV) on the right side, with no evidence of DVT on the left side, as shown in [Table/Fig-1]. The patient was administered an injection of Heparin 500 IU TDS. After a few hours on the same day, the patient was transferred to the interventional radiology unit for the procedure. [Table/Fig-2] shows visible swelling before the treatment.

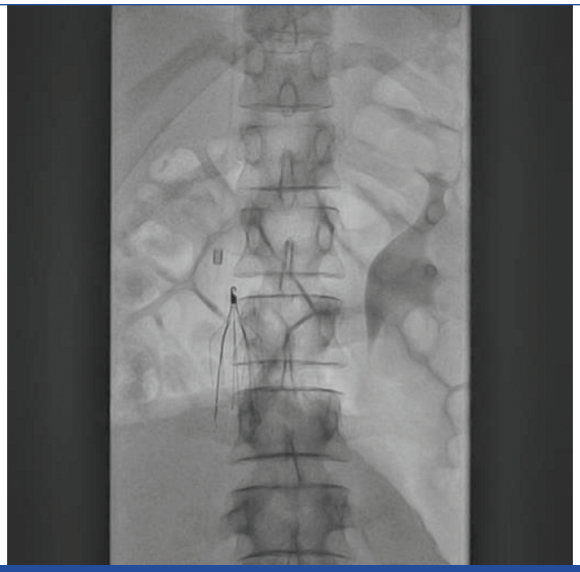


[Table/Fig-1]: Hyperechoic thrombus in the common femoral vein.

[Table/Fig-2]: Visible swelling pretreatment.

Under strict aseptic precautions, access to the right internal jugular vein was obtained using an 18G needle, followed by an IVC venogram. After confirming the appropriate position of the catheter, a Denali IVC filter was successfully deployed, which was further validated by a completion venogram, as shown in [Table/Fig-3]. Subsequently, access to the right popliteal vein was established using a 7F sheath. Mechanical maceration of the thrombus was performed, followed by thrombus aspiration using a 50 cc syringe. A spray catheter was used for post-thrombectomy imaging, and 3 mg of Actilyse was administered as a stat dose. [Table/Fig-4] illustrates the reduction in limb swelling post-treatment.

For postoperative management, 17 mg of Actilyse was diluted in 33 mL of Normal Saline (NS) to achieve a total volume of 50 mL, and



[Table/Fig-3]: IVC filter implant with deep vein thrombolysis of right lower limb.

[Table/Fig-4]: Post-treatment reduction in swelling.

an infusion rate of 3 mL/hour was maintained for the next 17 hours. The patient was prescribed Inj. Heparin 5000 IU TDS for three days, with monitoring of Activated Partial Thromboplastin Time (APTT) every 12 hours. Antibiotic prophylaxis included Tab. Augmentin 625 mg TDS. Analgesia was provided with Tab. Ultracet 50 mg TDS, while gastrointestinal protection was ensured with Tab. Pantop 40 mg OD. Anticoagulation therapy was transitioned to Tab. Xarelto 15 mg OD, starting with the fourth dose of Heparin for a duration of 21 days, followed by 20 mg OD for three months. Additionally, Tab. Chymoral Forte TDS was prescribed, and limb elevation was advised to facilitate recovery.

Anticoagulation therapy was initiated with Inj. Lomoh 40 IU BD for five days, bridging to oral Warfarin 2 mg BD. Postoperative care included a comprehensive antibiotic regimen comprising Inj. ceftriaxone 1 g IV every 12 hours for three days, followed by Tab. cefixime 200 mg BD for four days, alongside Inj. amikacin 500 mg IV BD for five days and Inj. metronidazole 100 mg IV every eight hours for three days, which was later transitioned to Tab. metronidazole 400 mg TDS for four days. Additional medications included Inj. Pan 40 mg IV every 12 hours for three days, followed by Tab. Pan 40 mg BD for four days, and Inj. Emset 4 mg IV every 12 hours for three days to manage gastrointestinal symptoms.

Pain relief was achieved with Zonac suppositories PR TDS for three days and Tab. Emanzen D BD for four days, while anticoagulation was maintained with Tab. apixaban 5 mg BD for three days post-Lomoh therapy. Supportive care included Tab. Limcee BD for four days, Tab. Iron OD for two days, and Tab. Calcium OD for two days. The patient was monitored in the Medical Intensive Care Unit (MICU) before being transferred back to the obstetrics unit. Physiotherapy and mobilisation were conducted under supervision, with input from neonatology confirming safe breastfeeding while on anticoagulation therapy. Wound care involved regular dressing checks on days 4, 7, 12, 14, and 16, consistently showing healthy healing with no signs of infection or discharge. Mattress sutures were removed on Day 14, and the remaining sutures were removed on Day 16. The patient remained stable throughout her stay, demonstrating successful recovery from DVT and uneventful wound healing.

DISCUSSION

After caesarean sections, DVT is a serious complication that increases the risk of maternal morbidity and mortality. Due to factors such as immobility, increased coagulation and surgical intervention, the risk of DVT is significantly higher during the postpartum period, particularly following caesarean delivery [1]. To avoid serious consequences, such as pulmonary embolism, it is essential to understand the risk factors and early detection techniques [1]. Feng X et al., used a methodical approach to assess the risk factors for DVT in older pregnant women undergoing caesarean sections. The study included 176 postpartum women who met the eligibility requirements. Within a month following delivery, 67 cases (approximately 38%) of the 176 postpartum women in the study developed DVT [2].

During the third trimester and the first few weeks after giving birth, the risk of DVT rises substantially, and caesarean sections increase this risk by five to ten times [3-5]. Other risk factors contributing to DVT development include immobility, obesity, thrombophilia and emergency caesarean sections. Symptoms of DVT can include oedema, pelvic and lower limb pain and unilateral leg swelling. Additional research is needed to address these symptoms. Magnetic Resonance Venography (MRV) and Doppler ultrasound are helpful in diagnosing DVT and MRV has a high sensitivity for identifying pelvic vein thrombosis [6,7].

Due to the increased risk of thromboembolic events in this population, the use of anticoagulants is essential for Venous Thromboembolism (VTE) prophylaxis following caesarean sections. According to numerous studies, Low Molecular Weight Heparin (LMWH) and other anticoagulants are safe and effective at reducing this risk. LMWH is commonly used to prevent VTE and has been shown to significantly lower the incidence of VTE after caesarean sections. Studies have demonstrated that the administration of LMWH normalises a hypercoagulable state in the early postpartum period [8,9].

There are several advantages to using IVC filters in postpartum patients with DVT, especially in specific clinical situations. The main purpose of IVC filters is to prevent blood clots from entering the lungs, where they can cause potentially fatal pulmonary embolism [10]. A significant majority (91.3%) of IVC filters implanted during pregnancy were retrievable, according to a study by Brunton JS et al., [10]. Thus, the filter can be removed if the risk of DVT or pulmonary embolism declines, reducing the long-term issues linked to permanent filters [10]. The use of IVC filters in combination with anticoagulant therapy is a crucial component of managing DVT, according to a meta-analysis conducted by Schastlivtsev IV et al. Growing evidence about the safety and effectiveness of Direct Oral Anticoagulants (DOACs), such as rivaroxaban, provides clinicians with more options, which can enhance patient outcomes while lowering the risks associated with anticoagulation [11].

In this case, a Doppler study verified DVT in the right lower limb after the patient complained of unilateral pedal oedema. Early diagnosis and timely treatment significantly helped avoid potentially fatal consequences, such as pulmonary embolism. Given the acute

presentation, the implantation of an IVC filter was a critical step in reducing the risk of embolisation. During the postpartum phase, anticoagulation therapy using LMWH, bridged to warfarin, ensured safe and effective management of the thrombus. The transition to DOACs, such as apixaban, allowed for ease of use and enhanced compliance during recovery.

The multidisciplinary approach greatly aided the patient's comprehensive care, which included physiotherapy for early mobilisation and neonatology consultation for breastfeeding safety. Postoperative antibiotics and supportive medications reduced the risk of wound infection and thrombus progression. Optimal healing was confirmed by routine wound evaluations and dressing changes, with no complications observed.

This case emphasises the importance of examining thrombotic events in postpartum patients, particularly those with additional risk factors, such as caesarean delivery. It highlights the critical roles of timely Doppler imaging, effective anticoagulation strategies and team-based care in achieving positive outcomes.

CONCLUSION(S)

Managing postpartum DVT necessitates a systematic, interdisciplinary approach. In this case, the successful implantation of an IVC filter and the initiation of appropriate anticoagulation treatment resulted in a positive outcome, with the thrombus resolving and the patient recovering without any complications. Careful wound care and routine monitoring all contributed to the patient's recovery. This case emphasises the importance of early detection and intervention in preventing major complications and demonstrates the effectiveness of contemporary thrombotic management techniques for postpartum patients.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Jan 10, 2025
- Manual Googling: Feb 22, 2025
- iThenticate Software: Feb 25, 2025 (9%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Jan 09, 2025**
Date of Peer Review: **Feb 06, 2025**
Date of Acceptance: **Feb 27, 2025**
Date of Publishing: **Apr 01, 2025**