ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 09 | September - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE REPORT OF ACUTE DEEP VEIN THROMBOSIS IN POST HYSTERECTOMY PATIENT

Obstetrics & Gynaecology

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ABSTRACT

Deep vein thrombosis (DVT) is a serious postoperative complication resulting from blood clot formation in deep veins, often associated with significant morbidity and mortality. Venous thromboembolism (VTE) is the second most common medical complication following gynecological surgeries, with an incidence of 0.5–1.1% post-hysterectomy. A case of 46-year-old woman with a history of hypothyroidism and chronic tobacco use, who presented with heavy menstrual bleeding for one year, unresponsive to medical management. Evaluation led to a hysteroscopy-guided endometrial biopsy. As conservative measures failed, surgical intervention was undertaken by Total abdominal hysterectomy and Right Salpingoovariotomy left salpingooophorectomy at Navodaya Medical College Hospital and Research Centre Hospital. On postoperative day 2, the patient developed sudden numbness and tingling in the left lower limb, accompanied by grade 3 pitting edema, tense and shiny skin, and a positive Homans sign. Doppler ultrasound confirmed Acute DVT of left lower limb She was managed with subcutaneous enoxaparin 60 mg, followed by oral acenocoumarin (Acitrom), which was later switched to rivaroxaban 15 mg twice daily. Supportive measures included physiotherapy, hydration, and compression stockings. The patient showed complete recovery without further complications. This case emphasizes the importance of timely risk stratification, adherence to thromboprophylaxis protocols, and vigilant postoperative monitoring to prevent life-threatening complications in gynecological surgeries. Gynecological surgeries inherently carry an increased risk of thromboembolic events. Early diagnosis and timely thromboprophylaxis are essential due to the risk of pulmonary embolism, a leading cause of preventable postoperative mortality.

KEYWORDS

Deep vein thrombosis; Hysterectomy; Thromboprophylaxis; Postoperative complication

INTRODUCTION

Deep vein thrombosis (DVT) is the formation of a thrombus within the deep veins, most commonly of the lower extremities, that causes local venous obstruction and is the principal source of pulmonary embolism. DVT is a major and preventable postoperative complication, particularly following pelvic surgeries such as hysterectomy.[1]

It results from Virchow's triad—venous stasis, endothelial injury, and hypercoagulability—which together predispose to thrombus formation[2].

The reported incidence of venous thromboembolism (VTE) following gynecological surgeries ranges from 0.5–1.1%, with hysterectomy carrying high risk due to prolonged operative time, vascular manipulation, and reduced mobility in the postoperative period[3]. Pulmonary embolism, the most feared consequence of DVT, remains one of the leading causes of preventable postoperative mortality[4].

Several factors increase the likelihood of thrombus formation. These include patient-related risks such as age, obesity, immobility, smoking, and comorbidities like hypothyroidism and cardiovascular disease, procedure-related factors like surgical trauma, pelvic venous congestion, and prolonged recovery[5]. Gynecological patients undergoing major surgeries therefore constitute a high-risk group for thromboembolic events.

Early recognition is essential, as the clinical presentation may be overlooked. Classic features include unilateral limb swelling, pain, tenderness, and positive Homans sign, but many cases remain asymptomatic until complications arise[6]. Doppler ultrasound remains the standard diagnostic tool.

Case Report

A 46-year female, para 4 living 4, Tubectomised 26 years ago, resident of Raichur, presented to OBG outpatient department at Navodaya Medical college Hospital & Research Centre, Raichur with complaints of Heavy menstrual bleeding for the past one year. She was a known case of Hypothyroidism and on Tab.Thyronorm 25 mcg once daily. History of tobacco chewing for 10 years.

She was obese & general physical examination showed pallor.

Systemic Examination- CVS/CNS/RS- Normal.

Abdominal examination was soft and non-tender.

Per Speculum Examination - Vulva, Vagina healthy, cervix healthy and minimal white discharge.

On bimanual examination uterus bulky, anteverted, fornices free, No cervical motion tenderness

Investigations

Hb-9g/dl
Platelet Count: 2.37 lakh/mm³.
Blood group and Rh typing-O positive
Urine Routine – Normal
RBS-108mg/dl
HIV- non-reactive
HbsAg – non-reactive
PT-14.5s, aPTT- 29s, INR -1.0
Fasting Thyroid profile- TSH-5.33U/ml, fT3-2.82pmol/L, fT4-9.34pmol/L
Liver Function Test-Normal
Renal Function test- Normal
ECG- Normal sinus Rhythm
Chest X ray- Normal
2D Echo- Ejection Fraction>60%, No other structural abnormality
Ultrasonography showed a normal-sized uterus with endometrial thickness of 9.5 mm and left ovarian cyst of 3.8 × 2.6 cm
Hysteroscopy-guided endometrial biopsy showed Endometrial Hyperplasia with atypia

Management:

Patient was explained about the condition; As conservative measures failed, surgical intervention was undertaken, consent was taken for surgery. Total Abdominal Hysterectomy with Left Salpingo-Ovariotomy and Right Salpingo-Oophorectomy was done on 19th November 2024 (Fig1) Specimen sent for histopathology (Fig2). Skin closure by mattress sutures. Intra-operative blood loss: 400–500 ml.

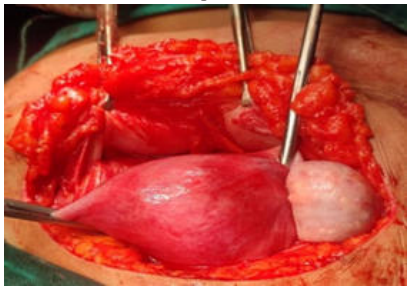

Figure 1: Intra op showing Bulky uterus with left Simple Ovarian cyst

Figure 2: Cut section of Gross specimen – Diffusely thickened endometrial lining with irregular surface

Post-Operative Course:

- **POD1**: The patient was mobilized. Post-op 1-pint pRBC transfused.
- **POD2**: The patient complained of numbness and tingling in the left lower limb, no complaints of cough, breathlessness, or chest pain.
- **Examination Findings**: Grade 3 pitting edema in the left lower limb, the skin over the swelling was tense, shiny, and devoid of hair. Peripheral pulses were present. Homan's sign was positive.
- **Vitals:** Stable

Patient was diagnosed as Acute Deep Vein Thrombosis of left Lower Limb (Fig3)

Figure 3: Diffuse Swelling of Left lower limb from Ankle to above knee

Patient was subjected to USG Doppler of Lower limb. It revealed a hypoechoic thrombus in the External Iliac, Common Femoral, Superficial Femoral, and Popliteal Veins, with non-compressibility and diffuse subcutaneous edema.

The Medicine, Cardiology, and Surgery departments were consulted for the patient's management. They recommended CBC, PT, APTT, INR, 2D Echo, and initiation of medical treatment with Inj Enoxaparin, as well as the placement of an IVC filter.

Post-Op Hb: 11.1 g%(After 1 pint pRBC Transfusion)Platelet count: 1.93 lakh/mm³. Trop I: 3.6 ng/dl (Normal -<19ng/l) D-dimer: 1076 ng/ml (normal:<500ng/MI) - ECG: Sinus tachycardia, V1-V5 T wave inversion. - Serum Calcium: 8.7 mg/dl. - 2D Echo: Normal, EF 60%, Normal Chest X-ray &Coagulation Profile – Normal ,Serum Homocysteine:5.96 µmol/L

Histopathology Report of Uterine Tissue showed Chronic Nonspecific Cervicitis with koilocytic change, Squamous Metaplasia, Secretory Hyperplasia of the Endometrium, and Adenomyosis.

The patient was strictly immobilized. Inj. Enoxaparin 0.6 mg S/C was started on POD2 for 7 days, Tab.

Acitram 1 mg OD started on POD4. Hydration, physiotherapy exercises and compression stockings were included. (Fig4)

Fig 4- Compression stocking

Due to non-availability of vascular/ Interventional surgeon, patient was referred to Higher Centre for IVC filter however, after assessment, it was decided that the procedure was not required. and started on Tab. Rivaroxaban 150 mg BD and Cap. Homocheck OD, with regular monitoring of CBC, PT, APTT, and INR.

The patient was discharged in a stable condition and returned home for further recovery and follow-up care. She was subsequently followed up every two weeks at our hospital and once monthly at the higher center. Follow-up scan after six months with Doppler ultrasound revealed complete resolution, with no evidence of thrombus in the External Iliac, Common Femoral, Superficial Femoral, and Popliteal Veins, the higher center advised discontinuation of rivaroxaban.

DISCUSSION

Deep vein thrombosis (DVT) is a serious postoperative complication characterized by thrombus formation in the deep venous system, most commonly involving the lower extremities[7] It is part of venous thromboembolism (VTE), which also includes pulmonary embolism, a potentially fatal event. The pathogenesis of DVT is explained by Virchow's triad—venous stasis, endothelial injury, and hypercoagulability[8].

Hysterectomy, one of the most frequently performed gynecological surgeries for both benign and malignant indications, is associated with a measurable risk of postoperative DVT[9]. The reported incidence ranges between 0.5–1.1%, with higher rates observed in oncological hysterectomies[10] Surgical dissection of pelvic vessels, prolonged operative duration, intraoperative blood loss, and postoperative immobility contribute to this increased risk.

Several risk factors predispose patients to DVT after hysterectomy. These include advanced age, obesity, smoking, prior history of thromboembolism, varicose veins, medical comorbidities such as diabetes or hypertension, and malignancy[7]. Among surgical factors, abdominal hysterectomy carries a higher risk, likely due to greater tissue trauma. Malignancy further amplifies risk through tumor-related hypercoagulability[9].

Postoperative fluid management is another important determinant of thromboembolic risk. Both dehydration and fluid overload adversely influence patient recovery[11]. Inadequate hydration causes hemoconcentration, reduced venous return, and venous stasis, all of which promote thrombus formation. Conversely, excessive fluid administration may result in interstitial edema, impaired mobility, and delayed recovery, indirectly increasing the risk of DVT[5]. Balanced crystalloids such as Ringer's lactate are preferred over 0.9% saline, as they reduce the likelihood of metabolic acidosis and maintain plasma electrolyte balance. Colloids provide rapid plasma expansion but carry risks of renal impairment and coagulation abnormalities, limiting their role. Maintaining euvolemia with careful monitoring of urine output, hemodynamics, and early oral hydration once tolerated is emphasized in perioperative care[11].

Inferior vena cava (IVC) filters are considered in selected cases of DVT, particularly when anticoagulation is contraindicated, poorly tolerated, or ineffective[5]. Current evidence suggests that their routine use is not recommended, as long-term risks such as filter thrombosis, migration, and caval occlusion often outweigh the benefits in patients who can be managed effectively with anticoagulation alone[11].

This case demonstrates that even in the absence of major predisposing factors, postoperative DVT can occur following hysterectomy. Early detection of calf swelling and pain, confirmation with Doppler ultrasonography, and prompt initiation of anticoagulation prevented progression to pulmonary embolism in this patient. Preventive measures such as thorough preoperative risk assessment, optimal postoperative management including judicious fluid therapy, and early ambulation can significantly reduce postoperative morbidity and

mortality[11].

CONCLUSION

This case highlights the importance of vigilant postoperative monitoring and timely recognition of deep vein thrombosis, even in the absence of classic systemic symptoms such as breathlessness. Gynecological surgeries like hysterectomy, particularly in the presence of additional risk factors such as tobacco use and anemia, warrant careful preoperative risk assessment.

Early intervention with hydration, physiotherapy, compression stockings, and anticoagulation proved effective in managing this potentially fatal complication. This case reinforces the need for postoperative fluid management individualized thromboprophylaxis protocols and strict adherence to clinical guidelines to improve surgical outcomes and prevent long-term morbidity.

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