

TO ASSESS THE INCIDENCE OF DVT AMONG PATIENTS OF LOWER LIMB SURGERIES /LOWER LIMB TRAUMA ADMITTED TO ST. STEPHEN'S HOSPITAL

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Abstract

Background: This study therefore aimed to assess the incidence of DVT among patients of lower limb surgeries /lower limb trauma admitted to St. Stephen's hospital

Methods: The prospective study was conducted at St Stephen's hospital from Jan 2019 to December 2019 for duration of 1 year, and 104 patients were part of the study.

Results: The overall prevalence of DVT in our study was found to be 2.8%. Out of 3 DVT cases 2 were found in males (3.4%) and 1 was a female (2.1%).

Conclusion: There is comparable incidence of DVT in our patients as compared to the incidence found in world literature. There is a need to institute DVT prophylaxis in patients undergoing major lower limb surgeries.

Keywords: DVT, Lower limb, Trauma

Introduction

The term thrombosis refers to the formation from constituents of blood, of an abnormal mass within the vascular system of a living animal. When this process occurs within the deep veins, it is referred to as deep vein thrombosis (DVT). DVT, a subset of venous thromboembolism (VTE), is a major preventable cause of morbidity and mortality worldwide. The incidence of VTE is estimated to be 1 per 1,000 people annually^{1,2}; with DVT accounting for approximately two-thirds of these events.³ Pulmonary embolism (PE), a dreaded complication of DVT, occurs in up to one-third of cases and is the primary contributor to mortality.⁴ Much of the morbidity of DVT results from the development of post-thrombotic syndrome, which occurs in up to 50% of patients within 2 years of DVT and encompasses a number of symptoms including leg pain, swelling, and in severe cases, venous ulcers.⁵

The prevalence of DVT of the hip after trauma is reported to range from 11.1% to 32.8% in recent studies.⁶ There is a common perception that incidence of DVT in Asian population is low; however, there are reports of higher incidence of DVT even among Indian and other Asian population, one of the reasons for this could be diagnostic tools used to diagnose DVT in Asian population.⁷ Majority of these cases do not show the classical signs and symptoms of DVT and the incidence of pulmonary embolism is only 1 to 2% of the cases with DVT, so diagnosis of deep vein thrombosis clinically is difficult. Most of the reports of DVT relate to the arthroplasty cases that are done however the true incidence in non-arthroplasty lower limb trauma patient that is confined to the bed is not clearly understood.⁸

This study therefore aimed to assess the incidence of DVT among patients of lower limb surgeries /lower limb trauma admitted to St. Stephen's hospital.

Material and Methods

The prospective study was conducted at St Stephen's hospital from Jan 2019 to December 2019 for duration of 1 year, and 104 patients were part of the study.

Inclusion Criteria

- 1) Patient above 35 years of age undergoing lower limb surgeries at St Stephens hospital
- 2) Patient (above 35 years of age) of lower limb trauma treated conservatively needing hospital admission
- 3) Patient ready to take part in the study

Exclusion Criteria

- 1) Patients below 35 years of age
- 2) Not consenting
- 3) Patient with history of bleeding tendency
- 4) Patient with history of peptic ulcer
- 5) Patient with history of uncontrolled hypertension
- 6) Patient allergic to heparin
- 7) Patients already on oral anticoagulant before the trauma; however, patients taking aspirin were included.

In included patients 1st USG was done within 72 hours of trauma (only those who are getting admitted) and in elective cases 1stUSG was done before surgery(right after admission). 2 nd USG was done 2 to 3 weeks after the 1st USG. USG examination included assessment of these vessels

- 1) Common femoral vein
 - 2) Superficial femoral vein
 - 3) Popliteal vein
 - 4) Anterior tibial vein
 - 5) Posterior tibial vein
- Diagnosis of DVT was made based on visualization of thrombus, absence of flow, lack of

compressibility. For deep veins loss of compressibility is the main criteria of diagnosis DVT.

Results

The study regarding prevalence of DVT after lower limb surgeries and trauma was conducted at St Stephen's hospital from January 2019 to December 2019. A total of 104 patients were included in the study, these patients were evaluated based on lower limb venous ultrasonography. The USG was done two times one right before the surgery and second USG was done 2 to 3 weeks after the 1st USG study. Diagnosis of DVT was made based on USG findings, out of total 104 patients 3 patients had DVT when the second USG was done at 2 to 3 weeks interval.

Table 1: Age wise distribution

Age	No of patients	DVT
<65 Yrs	61	0
>65 Yrs	43	3 (6.9%)

Out of total 104 patients 61 patients (58.6%) were between 35 to 65 years of age group and 43 patients (41.3%) were above 65 years of age group.

Table 2: Sex wise distribution

Sex	No of patients	DVT
Male	58	2(3.4%)
Female	46	1(2.1%)

Of total 104 patients 58 were males (55.7%) and 46 were females (44.2%)

Table 3: Duration of enoxaparin prophylaxis received by patients

Duration of enoxaparin	No of patients	DVT
Upto 2 days	63	3(6.9%)
More than 2 days	41	0

43 patients (41.3%) received enoxaparin for up-to 2 days and 61 patients (58.6%) received enoxaparin for more than 2 days.

Discussion

DVT and pulmonary embolism (PE), known collectively as venous thromboembolism (VTE), affect an estimated 900,000 people in the U.S. each year resulting in several hundred thousand hospitalizations and about 300,000 deaths.⁹

About two-thirds of episodes manifest as DVT and one-third as PE with or without DVT.^{6,8} In general, surgical patients without prophylaxis against VTE, the incidence of DVT has been reported to be as high as 30%, with an associated fatality risk of 1%.¹⁰

Venous thromboembolic events are also common and potentially life-threatening complications after traumatic

injury. Some recent studies report an increasing incidence of VTE in the Indian subcontinent.¹¹ The increased incidence is attributed to increased life expectancy, changing lifestyle and better methods of diagnosis. Clinical signs are insensitive to the diagnosis of VTE. This is especially true in trauma patients in whom lower limb swelling, pain, chest pain, breathlessness and fever can all occur due to injury per se.¹²

The present study was aimed to evaluate the prevalence of DVT using USG in patients after lower limb surgery and trauma. In our study, out of 63 patients with trauma, only 3 patients were found to have DVT with an incidence of 4.7%. Piotrowskiet al.¹³ determined the incidence of DVT in post-traumatic patients and reported an incidence of 20 to 40%.

Sevitt and Gallagher's¹⁴ autopsy study of 125 patients revealed a 65% incidence of DVT and 16% incidence of

PE. A general population study that followed 21,680 persons for occurrence of venous thrombosis over 7.6 years demonstrated that trauma was only present in 6%, revealing a relatively low potential number of cases globally that could be avoided with prophylaxis in this setting, while cancer was present in 48% and surgery was present in 42%.

Conclusion

There is comparable incidence of DVT in our patients as compared to the incidence found in world literature. There is a need to institute DVT prophylaxis in patients undergoing major lower limb surgeries.

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