

# Inpatient Versus Outpatient Venous Thromboembolic Events After Spine Surgery: An Analysis of 6869

## Consecutive Patients Revealing Distinct Risk Factors

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### Introduction

Venous thromboembolic events (VTEs) are a common cause of readmission and morbidity for patients undergoing spine surgery. The existing literature has not examined risk factors for VTEs in the outpatient setting distinct from VTEs in the inpatient setting.

### Methods

We retrospectively collected data on all patients who underwent spine surgery at our institution between 2009 and 2015. Multivariable analysis was performed to identify demographic, clinical, and procedural factors independently associated with VTE events during three time periods: during the initial inpatient admission, after discharge following the index surgery and at any point during the first 30 postoperative days.

### Results

Having an outpatient DVT was independently associated with readmission within 30 days (OR 62.619,  $p=0.002$ ). Time to onset of VTE events was significantly longer for patients with an osteotomy than for patients with a fracture (7.43 v. 4.28 days,  $p=0.0180$ ). Multiple factors were associated with DVT or PE in both the inpatient and outpatient settings. Factors associated with PE as an inpatient only include surgery >4 hours (OR 30.820,  $p<0.001$ ), fracture (OR 6.913,  $p=0.004$ ), preoperative IVC filter placement (OR 3.135,  $p=0.029$ ), and prophylactic anticoagulation (OR 0.285,  $p=0.017$ ). Factors associated with PE as an outpatient only include corpectomy (OR 541.271,  $p=0.009$ ), EBL >500 (OR 2467.798,  $p=0.002$ ). Factors associated with DVT as an inpatient only include preoperative IVC filter placement (OR 6.380,  $p=0.000$ ), longer length of stay (OR 1.083,  $p=0.000$ ), and a prior history of DVT (OR 3.639,  $p<0.001$ ). Factors associated with DVT as an outpatient only include having a history of PE (OR 45.142,  $p=0.000$ ), having a corpectomy (OR 26.670,  $p=0.002$ ), and having an osteotomy (OR 18.877,  $p=0.041$ ).

### Conclusions

DVT as an outpatient is associated with 30-day readmission. The factors associated with inpatient VTE events are distinct from the factors associated with outpatient VTE events. Time-to-VTE event varies by pathology and procedure.

### Learning Objectives

Outpatient DVTs is a cause for readmission

The factors associated with inpatient VTE events are distinct from the factors associated with outpatient VTE events. Time-to-VTE event varies by pathology and procedure.

### Time to VTE by Pathology

