

Venous Thromboembolism in Foot and Ankle Surgery Patients: Who is at Risk?

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INTRODUCTION:

Venous thromboembolism (VTE) after foot or ankle surgery is a significant concern for patients and surgeons. The absence of guidelines for thromboprophylaxis in elective procedures underscores the importance of identifying those patients at risk. This study aimed to identify key risk factors of VTE in patients who underwent elective foot/ankle (FA) surgery, analyzing rates based on the anatomical location of surgery and the postoperative period.

METHODS:

Data was collected from a large healthcare database (2009-2019) for patients ≥ 18 y without prior VTE who underwent elective foot/ankle surgery. Patients were divided into three groups based on region of surgery (forefoot, mid/hindfoot, lower leg/ankle), and VTE incidence was recorded 30- and 90-days post-surgery. Risk factors for VTE were identified through multivariate logistical regression analysis.

RESULTS:

Among the 301,256 patients who underwent elective FA surgeries, the overall 90-day incidence of VTE was 0.95%. The findings revealed that 31.8% of VTE incidents occurred within the first two weeks after surgery, and 29.2% still occurred after 6 weeks. Analysis of the anatomical region of surgery demonstrated that the lowest rate of 90-day VTE was among patients undergoing forefoot surgery (0.70%). There was a significantly higher risk for 90-day VTE in patients undergoing midfoot/hindfoot surgery (1.22%; OR = 1.75, $p < 0.001$) and lower leg/ankle surgery (1.76%; OR = 2.53, $p < 0.001$). Additional risk factors for VTE included thrombophilia (OR = 5.06, $p < 0.001$), male sex (OR = 1.43, $p < 0.001$), increasing age (OR > 1.25, $p < 0.05$), and a high Charlson Comorbidity Index (OR < 0.82 for scores < 5 , $p < 0.05$).

DISCUSSION AND CONCLUSION:

This study identifies the incidence and timing for VTE after elective FA surgery. Furthermore, this study defines the risk factors associated with increased odds of VTE after elective foot/ankle surgeries. These findings are helpful in educating patients about a continued risk for VTE throughout the 90-day postoperative period. These results can also be utilized to stratify patients who need thromboprophylaxis based on the individual risk level.

Table 2. Rates of 30- and 90-Day VTE by Anatomical Region of Surgery

Region of Surgery	30-Day VTE rate (%)	Odds Ratio (30-Day VTE)	95% CI	p-value
Forefoot	0.41	(reference)		
Mid/Hindfoot	0.75	1.77	1.50 - 2.08	<.001
Lower Leg/Ankle	1.13	2.63	2.36 - 2.92	<.001
Region of Surgery	90-Day VTE rate (%)	Odds Ratio (90-Day VTE)	95% CI	p-value
Forefoot	0.70	(reference)		
Mid/Hindfoot	1.22	1.75	1.54 - 1.99	<.001
Lower Leg/Ankle	1.76	2.53	2.33 - 2.75	<.001