Characteristics and Outcomes of Venous Thromboembolism-Related Litigation in Orthopaedic Surgery

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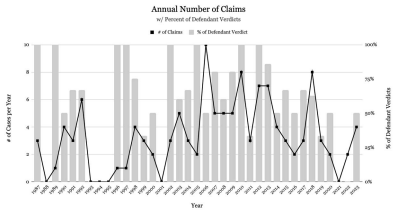
INTRODUCTION:
Orthopaedic surgeons continue to experience a disproportionately high risk of facing legal action for alleged medical malpractice as compared to other medical specialties. Venous thromboembolism (VTE) following orthopaedic surgery is an uncommon complication associated with a significant degree of morbidity and mortality. Our study aimed to analyze the causes and outcomes of lawsuits levied due to VTE in orthopaedic surgery.

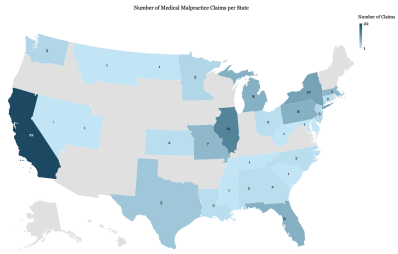
METHODS:
The Westlaw online legal database was queried for all claims levied against orthopaedic surgeons on the basis of VTE following treatment from 1987 to 2023 using the search terms “deep vein thrombosis” (DVT), “pulmonary embolism” (PE), and related synonyms. Malpractice claims were deemed for inclusion based on whether or not the case grievance(s) was directly related to VTE following orthopaedic surgery. Data collected includes case ruling, location of the filed claim, payment or settlement amount, and sustained damages.

RESULTS:
A total of 371 cases were screened for inclusion in our study, 122 of which put forth for further investigation. Of these 122 cases, 85 (69%) resulted in a defendant outcome while 38 (31%) resulted in a plaintiff outcome. 66 (56%) plaintiffs were male and the mean age was 49 years. There was a mean of three cases annually, which slightly increased across the study period (r=.2846, p=.0873). The most litigious states were California (n=22, 18%), Illinois (n=14, 11%), and New York (n=10, 8%). Plaintiff verdicts resulted in an average monetary payout of 2,393,488 USD (range: 60,000 USD – 12,500,00 USD), while settlements resulted in an average payout of 661,952 USD (range: 72,500 USD – 3,000,000 USD). Documented preoperative risk factors were reported in 39 (32%) cases, the most common being obesity (n=18, 46%) followed by prior history of DVT or PE (n=10, 26%), and prolonged immobility or sedentary lifestyle (n=9, 7%). No significant differences in mean financial award based on inclusion of documented risk factors (p=.7123) or based on patient sex (p=.1752) were identified. Knee surgery (n=35, 29%), consisting of arthroscopy and total knee arthroplasty, was the most common operation performed followed by fracture fixation (n=21, 17%) and total hip arthroplasty (n=14, 11%). Nonoperative treatment comprised 11% of cases, with 10 (8%) claims filed after cast or splint application, 2 (1%) after prolonged bracing following surgery, and 1 (0.8%) after closed fracture reduction.

The most common causes for litigation were delayed diagnosis and treatment (n=49, 20%) and inadequate VTE prophylaxis (n=46, 38%). The most common complications were death (n=78, 64%) and prolonged pain and suffering (n=25, 20%). Malpractice claims where plaintiffs reported pain and suffering as a result of a physician’s alleged negligence were more likely to result in a defendant favorable verdict (p=.0204). Otherwise, no statistically significant association was found between jury verdict and basis of litigation (p=.7805), patient sex (p=.5714), or presence or absence of VTE risk factors (.6304). Of the 63 (52%) cases that reported VTE prophylaxis, the most common were Coumadin (n=4, 6%), Lovenox (n=4, 6%), Heparin (n=3, 5%), and sequential compression devices (n=3, 5%). There was no difference in case outcome based on medication used for chemical prophylaxis (p=.2878). 44 (70%) cases reported not initiating VTE prophylaxis as indicated by institutional protocol. Such cases where surgeons followed institutional policy on VTE prophylaxis were more likely to result in a defendant verdict (p=.0063).

DISCUSSION AND CONCLUSION:
Although advances in treatment of postoperative mechanical and chemical VTE have decreased absolute incidence of DVT and PE, VTE-related medical malpractice in orthopaedic surgery has remained persistent across the past two decades. Strategies to mitigate risk of VTE-related litigation should focus on decreasing delays in DVT identification, which may involve emphasizing patient education on signs and symptoms that warrant prompt return to the Emergency Department. Although following institutional policy regarding postoperative VTE prophylaxis may not prevent litigation, it is more likely to result in a defendant verdict. Similarly, cases reporting persistent pain and suffering are more likely to have a defendant-favorable outcome.





VTE Litigation Outcomes by Case Characteristics				
Plaintiff Sex	**Defendant Verdict n (%)**	**Plaintiff Verdict n (%)**	**Category Total N**	**p value**
Male	44 (66.67%)	22 (33.33%)	66	.5714
Female	40 (71.42%)	16 (28.57%)	56	
Basis of Litigation	**Defendant Verdict n (%)**	**Plaintiff Verdict n (%)**	**Category Total N**	**p value**
Delay to Diagnose/Treat	36 (73.47%)	13 (26.53%)	49	.3669
Inadequate VTE Prophylaxis	32 (69.57%)	14 (30.43%)	46	.8948
Negligent Postoperative Monitoring	6 (60.00%)	4 (40.00%)	10	.5281
Intraoperative Error	5 (62.50%)	3 (37.50%)	8	.6881
Lack of Informed Consent	4 (66.67%)	2 (33.33%)	6	.9056
Improper Cast/Splint Application	1 (33.33%)	2 (66.67%)	3	.1786
Complications	**Defendant Verdict n (%)**	**Plaintiff Verdict n (%)**	**Category Total N**	**p value**
Death	52 (66.67%)	26 (33.33%)	78	.4876
Pain and Suffering	**22 (88.00%)**	**3 (12.00%)**	25	**.0204**
Repeat Hospitalization/Surgery	8 (61.54%)	5 (38.46%)	13	.5469
Amputation	2 (33.33%)	4 (66.67%)	6	.6456
Presence of Documented Risk Factors	**Defendant Verdict n (%)**	**Plaintiff Verdict n (%)**	**Category Total N**	**p value**
Documented Risk Factors	28 (71.79%)	11 (28.21%)	39	.6304
No Documented Risk Factors	56 (66.67%)	27 (33.33%)	83	
VTE Prophylaxis	**Defendant Verdict n (%)**	**Plaintiff Verdict n (%)**	**Category Total N**	**p value**
Coumadin	3 (75.00%)	1 (25.00%)	4	.8137
Lovenox	3 (75.00%)	1 (25.00%)	4	.8137
Heparin	2 (66.67%)	1 (33.33%)	3	.9087
Aspirin	2 (100.00%)	0 (0.00%)	2	.3468
Xarelto	1 (100.00%)	0 (0.00%)	1	.5076
SCD	3 (100.00%)	0 (0.00%)	3	.2501
Early Mobility	2 (100.00%)	0 (0.00%)	2	.3468
None Required Per Institutional Protocol	**24 (54.55%)**	**20 (45.45%)**	**44**	**.0063**
Not Stated	45 (76.27%)	14 (23.73%)	59	.6244