

Kierany B. Shelvin, MS
L3
LSU Health Sciences Center, New Orleans, LA

Mentor's Name: Dr. John Wilson, Dr. James Alan Velander,
LSUHSC, Department of Neurosurgery

Management of Anticoagulation Therapy After Craniotomy

Introduction: In the in-patient setting, physicians routinely administer anticoagulation (AC) therapy to treat venous thromboembolism (VTE). However, AC therapy is often held in neurosurgical patients undergoing craniotomies due to the risk of intracranial hemorrhage (ICH) associated with this operation. In addition to ICH, these patients are at an increased risk for post-operative VTE. It is estimated that 50% of patients experience VTE post-craniotomy. Currently, there is no standard protocol for VTE therapy following craniotomy. This continues to challenge neurosurgeons when determining the most appropriate management of anticoagulation therapy after craniotomy to simultaneously mitigate the risks of ICH and VTE.

Purpose: In this study, we reviewed the time frame of AC therapy administration as well as the incidence of ICH and other complications following AC therapy in patients after craniotomy.

Methods: We performed a retrospective chart review of all craniotomy patients from August 2017 and July 2021. Patients were selected if they received anticoagulation therapy following a VTE. Additionally, demographics and clinical data were collected including age, gender, reason for operation, day and time of AC administration, and type of AC received.

Results: Forty patients met the inclusion criteria. The range of initiation of anticoagulation therapy after surgery was from post-op day 2 to post-op day 107. The average time of AC therapy administration was post-op day 10. Five of the forty patients (12.5%) experienced complications following anticoagulation therapy with three of the five experiencing an intracranial hemorrhage. None of the patients who experienced complications required revisional surgery.

Conclusion and future directions: We conclude that our results display evidence for a benefit to anticoagulation therapy after craniotomy. Moreover, our results appear to exhibit the potential for safe administration of AC therapy earlier after craniotomy than previously observed. In the future, we plan to perform additional studies to gain insight into the most appropriate and safe time frame to anticoagulation therapy administration after craniotomy.