Upper airway stimulation implantation is safe to perform on systemically anticoagulated patients.

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Objectives

To evaluate outcomes of a population of patients undergoing upper airway stimulation who are concurrently under anticoagulation therapy.

To assess our institutional practice in managing anticoagulation in those patients undergoing upper airway stimulation.

Subjects and Methods

Upper airway stimulation (UAS) is a new, successful means of treating obstructive sleep apnea (OSA). Because of the comorbidities seen in the OSA population, many patients are on systemic anticoagulation. We hypothesize that UAS can be safely used in patients concurrently treated with anticoagulant medications.

We retrospectively reviewed our cohort of patients undergoing UAS and compared those on systemic anticoagulation to those not on medications impairing platelet or clotting function. Our departmental policy is to stop the anticoagulation preoperatively based on the cardiologist or vascular medicine consultant's recommendations. We then restart the anticoagulant one day postop.

	No anticoagulation	Any anticoagulation	p value
Age (years)	58.20±12.66	65.75±8.88	0.056
Gender	30 male; 22 female	20 male; 8 female	0.329
Operative time (minutes)	149.85±26.25	155.42±24.15	0.768
Estimated blood loss (mL)	18.83±8.29	19.23±7.03	0.432
Postoperative hematoma	0	0	1

Table 1: Demographic and operative data of those anticoagulated vs not. Data represents mean ± standard deviation

Study Design

Retrospective review

Results

To date, we have performed 82 UAS at our institution. 53 patients were not on any anticoagulation. Four were on aspirin 325mg, 16 on aspirin 81mg, 2 on warfarin, 2 on dabigatran etexilate, 3 on rivaroxaban, and 2 on clopidogrel.

We compared patients not anticoagulated to those on any anticoagulation, on aspirin 325mg, on aspirin 81mg, or on clopidogrel, dabigatran etexilate, rivaroxaban, or warfarin. We then compared the aspirin 325mg group to the aspirin 81mg cohort and to the warfarin, dabigatran etexilate, rivaroxaban, or Coumadin cohort. Lastly we compared the aspirin 81mg group to the clopidogrel, rivaroxaban, dabigatran etexilate, or warfarin cohort.

We found no difference in operative time, estimated blood loss, postoperative hematoma or seroma, or return to the operating room to control bleeding between the cohorts.

Conclusion

Our data suggest that UAS can be safely used in patients concurrently treated with anticoagulant medications. It can be restarted as early as postoperative day one without any increase in bleeding risk.

	No anticoagulation	ASA 81mg	ASA 325mg	clopidogrel/dabigatran/ rivaroxaban/warfarin	p value
Age (years)	58.20±12.66	64.50±8.14	67.50±7.43	67.38±9.92	0.850
Gender	30 male; 22 female	12 males; 4 female	3 male; 1 female	6 male; 2 female	0.466
Days stopped preoperatively		9.33±5.28	7.00±0.00	5.40±2.42	0.017
Operative time (minutes)	149.85±25.97	149.13±24.51	157.00±17.68	168.00±19.32	0.836
Estimated blood loss (mL)	18.83±8.20	21.00±4.89	12.5±4.33	19.29±9.04	0.182

Table 2: Demographic and operative data between anticoagulation regimens. Data represents mean ± standard deviation