University of Vermont MEDICAL CENTER

Meningioma Size and Associated Edema Non-**Contributory to 30 Day Readmission Rates or** Extended Length of Stay Luke Silveira MD,¹ Elnur Delahmetovic MS,¹ William Parkinson MD,²

Christina Ng,¹ Bruce Tranmer MD,¹ Brandon Liebelt MD¹

Background

Unplanned 30-day readmission and hospital length of stay (LOS) are increasingly utilized quality metrics amongst surgical specialties to evaluate successful outcomes and improve surgical practices as well as post-operative care. As of yet, there is insufficient data to suggest whether these metrics are significantly influenced by meningioma tumor characteristics relating to size, grade, peritumoral edema, or intracranial location. The purpose of this study is to investigate factors which may be tied to unplanned 30-day readmission and prolonged LOS amongst patients with a range of meningiomas undergoing surgical resection.

Results

11/82 patients (13.4%) of the study population had unplanned readmissions within 30 days of discharge. Mean length of initial hospitalization was 5.3 days. Neither tumor volume nor calculated peritumoral edema volume were strongly correlated with unplanned readmissions or prolonged length of hospitalization. Higher WHO tumor grade was moderately associated with tumor volume (0.43) and weakly associated with peri-tumoral edema volume (0.37), but it was not independently associated with 30-day readmission or LOS. Neither skull base tumor location nor surgical approach were associated higher readmissions or LOS.

Methods

82 patients (mean age, 61.3 years)



undergoing craniotomies for resection of meningiomas arising from the skull base (n = 42) or convexity and falx (n=40) with preoperative contrasted MRIs including 3D-FLAIR sequences were identified from a retrospective database. The patients' demographics, tumor location, measured enhancing tumor volume, measured peritumoral edema volume, presenting symptoms, operative approach, WHO tumor grades, and occurrence of any postoperative deficits were recorded along with 30-day unplanned readmissions, initial lengths of hospitalization, and

Figure 1. Edema Measurement

Conclusions

Pre-operative radiographic measures of meningioma tumor volume and peritumoral edema volume offer little predictive value relating to length of hospitalization post meningioma resection or unplanned readmission rates. Skull based location, though necessitating increased operative time with more bony removal, is not correlated with increased rates of new neurologic deficits post op,

discharge destinations.

higher readmission rates, or longer lengths

of hospitalization.

Contact

Luke Silveira University of Vermont Medical Center 111 Colchester Ave. Burlington, VT 05403 Luke.Silveira@uvmhealth.org 386-262-3301