

Correlation Between WHO 1 Meningioma Location and MIB

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Learning Objectives

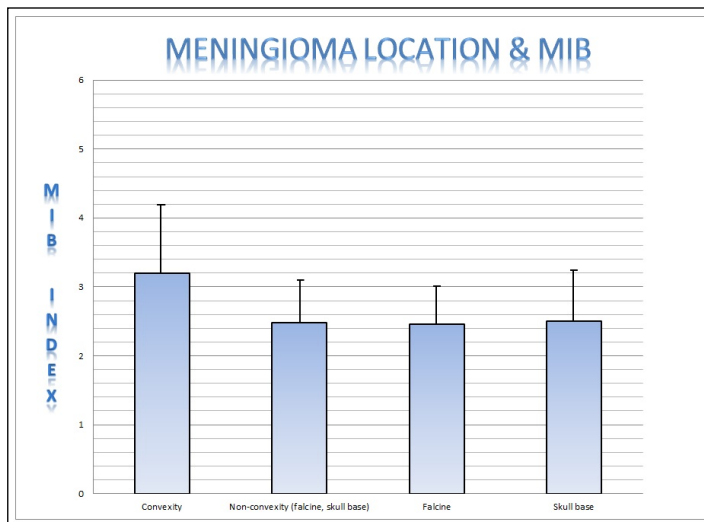
By the conclusion of the session, participants should be able to describe the importance of tumor location on the MIB-1 index and Simpson grade resection quality.

Introduction

There is a long and storied tradition of treatment for meningioma, informed greatly by Dr. Simpson's seminal paper in 1957 (1). Recently, treatment paradigms have begun to make a subtle shift. Judicious surgery with the goal of maximally safe resection is the mainstay of treatment, but perhaps a combination of surgical, radiographic and molecular markers will allow for the best accuracy in predicting the disease course overall (2,3). Anecdotal evidence suggests that convexity meningioma may have higher rates of recurrence. This prompted the current review. Additionally, our group is in the process of evaluating other clinical, radiographic and molecular markers for patients who have undergone meningioma resection at Henry Ford Hospital in the hopes of improving the predictability of recurrence and patient care.

Methods

Retrospective analysis of patients with WHO grade I meningioma resection at Henry Ford Hospital between February, 1994 and January, 2012 was carried out. Patient records, surgical reports and tissue samples for over 600 patients were made available by the Hermelin Brain Tumor Center. From these, 105 cases were reviewed with special attention to location, MIB-1 and Simpson grade. A 2-tailed Student's T-test was utilized to compare groups of patients.



Results

The mean MIB-1 for convexity lesions was 3.2 ± 2.1 ($n = 77$) as compared to falx (2.4 \pm 1.07, $n = 15$) and skull base (2.5 \pm 1.54, $n = 13$) locations. There was no statistically significant difference between groups although when comparing convexity lesions to non-convexity lesions a trend towards a higher convexity mitotic index was evident ($p = 0.09$). The median Simpson grade for convexity meningioma as well as non-convexity meningioma was 2.

Conclusions

There is no difference in MIB-1 activity or Simpson grade resection with respect to location. There is, however, a trend towards higher MIB-1 activity in convexity lesions. Further evaluation regarding meningioma recurrence is warranted.

References

1. Simpson D: The recurrence of intracranial meningiomas after surgical treatment. J Neurol Neurosurg Psychiatry 20:22-39, 1957.
2. Sughrue ME, Kane AJ, Shangari G et al. The relevance of Simpson Grade I and II resection in modern neurosurgical treatment of World Health Organization Grade I meningiomas. Clinical article. J Neurosurg 113:1029-1035, 2010.
3. Vankalakunti M, Vasishta RK, Das Radotra B et al. MIB-1 immunolabeling: a valuable marker in prediction of benign recurring meningiomas. Neuropathology 27:407-412, 2007.