Retrospective study on the relationship between tumor location, size and who grade in meningioma at tikur anbessa specilized hospital & mcm, addis ababa, ethiopia

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Objective:
A number of previous studies were done to investigate risk factors for meningioma. However, a few studies were done to investigate the association between size and location of a tumor with tumor grade. The objective of this study is to look for the relationship between tumor size and location with tumor grade in patients operated for intracranial meningioma at two neurosurgical training hospitals in Addis Ababa.

Methods:
A retrospective clinical, neuroimaging and pathological data was collected from patients undergoing meningioma resection. The largest tumor diameter on contrast enhanced MRI is used as tumor size. The location of a tumor is determined both from MRI and intraoperative finding and classified into skull base, non-skull base and intraventricular.SPSS version 25 was used. Univariate and multivariate logistic regression was done to investigate the relationship between tumor size and location with tumor grade.

Results:
Of the total 250 operated patients, 192 patients were included in the current study. Univariate logistic analysis was done if age, sex, tumor location and size were significantly associated with tumor grade. Age was not found to be a significant risk factor for atypical meningioma (P=0.29). Male sex was a significant predictor of tumor grade (OR 3.44, 95% CI 1.41-8.39, P=0.007). Larger tumor size was significantly associated with a meningioma being WHO grade II (P=0.028).Tumor location was found to be a significant predictor of being atypical meningioma, predicting that convexity, PSM and falx meningiomas have atypical WHO grade (OR 10.625, 95% CI 3.03-37.2, P=0.000). We also found that patients with atypical meningioma has higher risk of having visual impairment at presentation (OR 4.5, 95% CI 1.23-15.79, P =0.018).Other signs and symptoms of meningiomas have no association with WHO grade. Up on multivariate logistic analysis in which all significant variables from the univariate models are included, only tumor location was found to be independently associated with atypical meningioma (OR 6.93, 95% CI 1.828-26.275, P= 0.004). Non skull base meningiomas were associated with WHO grade II tumors.

Conclusions:
In our series, tumor location is an independent risk factor for atypical meningioma but size or gender are not.

Biography
Dr. Temesgen Geto Assefa has completed his undergraduate doctor of medicine degree at the age of 24 years from university of Gondar and his postgraduate neurosurgery specialty training from Addis Ababa University School of medicine. He is an assistant professor of Neurosurgery at Bahir Dar University. He is actively participating in clinical, academic and research activities in the university.

Received: November 28, 2021; **Accepted:** November 30, 2021; **Published:** March 25, 2022