OBJECTIVE: This study was undertaken to assess a possible relationship between the tumor location and the incidence of World Health Organization (WHO) Grades II and III meningiomas.

METHODS: A retrospective review of 794 consecutive patients who underwent meningioma resection between January 1991 and March 2004 was conducted. Among these, 47 patients (5.9%) with WHO Grade II meningiomas and 16 patients (2%) with Grade III meningiomas were further analyzed. Tumor location was assessed using preoperative magnetic resonance imaging scans and/or operative reports. Histological grading was done according to the WHO 2000 Classification scheme.

RESULTS: WHO Grade II tumors were found in eight out of 289 (2.8%) cranial base meningiomas and in zero spinal meningiomas, compared with 39 out of 429 (9.1%) non-cranial base meningiomas. Grade III histology was encountered in two (0.7%) cranial base tumors and in one out of 76 (1.3%) spinal tumors, compared with 13 (3%) non-cranial base tumors. The combined incidence of Grades II and III meningiomas was significantly lower in the cranial base (3.5%) and spinal (1.3%) locations compared with non-cranial base locations (12.1%) (P < 0.001).

CONCLUSION: WHO Grades II and III meningiomas occur far less frequently in the cranial base and spinal locations. Tumors arising from these locations may have different mechanisms of tumorigenesis and/or progression compared with meningiomas arising from other (non-cranial base) regions.

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