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Surgical Resection of Convexity Meningiomas: A Single Center Retrospective Analysis

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SI/CTR Abstract

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Surgical Resection of Convexity Meningiomas: A Single Center Retrospective Analysis

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Introduction:

Dural convexity meningiomas (CMs) are the most common primary intracranial tumors. Although surgical resection carries relatively low risk, it is necessary to quantify perioperative risks from a large patient cohort and identify factors contributing to short-term and long-term outcomes.

Methods:

Patients who underwent craniotomy for resection of CMs between January 2012-December 2018 at a single large academic center were reviewed for pre-operative demographics, radiographic characteristics, and post-operative outcomes.

Results:

122 cases of CMs were identified. Common presenting symptoms included headache (39.3%), seizure (27.0%) and weakness/paralysis (18%). CMs were located over frontal, parietal, temporal, and occipital lobes in 57.4%, 22.1%, 27.0%, and 9.0%, respectively. Mean maximal tumor dimension was 41.4 mm. (SD 18.2, range 9.0-100.0). Gross total resection was achieved in 92.6% (Simpson grade I, 49.2%; grade II 26.7%, grade III,

18.3%). Subtotal Simpson grade IV resection was achieved in 5.8%. Higher histological grades were present in 11.5% (WHO grade II) and 4.1% (WHO grade III) of patients. Mean Ki67% for WHO Grade 1 was 4.2(SD 3.1, range 0.5-17.3). Peri-operative complications occurred in **2.4% of patients**, including hemorrhage, venous air embolism, and seizure with zero 30-day mortalities. Larger tumors (>7 cm maximal diameter) had lower mean survival time ($p = 0.019$, mean difference = 17.3 months (2.861–31.659)), but no correlation with perioperative complications, recurrence, or overall mortality.

Discussion:

CMs are accessible and amenable to resection. Surgical risk is low, but not insignificant. Tumors larger than 7 cm have shorter survival time. These results help quantify risks for future patients.