## Secretory meningioma

Secretory meningioma (SM) is a rare histological subtype of the meningioma family. Few reports investigating SM have been published due to its extremely low incidence; thus, the current understanding of this disease is poor.

They are characterized by clinical and histopathological features that differ from the overall group of meningiomas. Reviewing the literature, a female predominance is evident (female:male ratio, 8:1). In 41%-64% of the cases, a suspicious disproportion between small tumor size and extended perifocal edema is observed that may justify an aggressive antiedematous therapy before surgery in order to prevent postoperative aggravation of edema. Pseudopsammomas and expression of CEA and CK in secretory meningiomas are closely related to cytotoxic edema leading to reduced compliance of the brain and life-threatening postoperative complications in some patients. Apart from this acute perioperative problem, secretory meningiomas show a prognosis comparable to the overall group of benign meningiomas <sup>1)</sup>.

It is reported to cause significant peritumoral brain edema (PTBE). Therefore, patients with SM may have more severe presenting symptoms, and possibly increased post-operative complications. Our aim was to perform a statistically rigorous comparison of patients with SM to other non-secretory WHO grade I meningiomas and examine PTBE, post-surgical outcomes, and recurrence in a large series of cases.

A retrospective review of all patients at our institution with pathologically confirmed SM between 2000-2017 was performed. A control group of non-secretory grade I meningiomas was matched 1:1 according to tumor location and size. Study groups were compared on clinical characteristics and outcomes using logistic, cumulative logit, and normal linear generalized estimating equations (GEE) regression models.

Fifty-five SM patients met inclusion criteria and were matched with 55 control patients. After adjusting for size and location, the odds of an SM patient having a more severe T2 edema grade were 8.9 (95% C.I. 3.8-21.1; p=0.001) times higher, and the odds of any T2 edema were 6.2 (95% C.I. 2.2-17.6; p=0.001) times higher. Significance remained even when adjusting for age. Post-operative complications, Simpson grade resection, neurological outcome, and recurrence were not significantly different <sup>2</sup>.

Tao et al. analyzed the incidence and clinical, radiological, pathological, and prognostic features of SM. Approximately 12,380 intracranial meningiomas were surgically resected at Beijing Tiantan Hospital between April 2008 and January 2017. All pathologically confirmed SM cases were identified. SMs accounted for approximately 1.2% of the intracranial meningiomas (149 of 12,380). The patients with SM had a mean age of 51.0 years and were predominantly female (112 female and 37 male). Radiologically, meningioma peritumoral edema was observed in 49 (32.9%) patients. Gross total resection was achieved in 115 (77.2%) cases. At the 35-months median follow-up (range 4-109 months), six patients had tumor recurrence, and one patient died from the tumor recurrence. The 5-year progression-free survival rates were 95.9%, and the 5-year overall survival rate was 99.3%. A skull base location and a tumor size  $\geq$  3.5 cm were significantly associated with poor short-term outcomes, and a skull base location was significantly associated with an increased risk of poor long-

term outcomes (P < 0.05). A skull base location (OR 3.797; 95% CI 1.071-13.468; P = 0.039) and tumor size  $\geq$  3.5 cm (OR 2.616; 95% CI 1.107-6.181; P = 0.028) were independent risk factors for nongross total resection. A son-skull base location (OR 0.070; 95% CI 0.028-0.177; P = 0.001) was the only independent risk factor that correlated with more severe peritumoral brain edema. SM is a rare subtype of meningiomas with a female predominance and low recurrence.

The results highlight the risk factors for short- and long-term outcomes, which can be useful for selecting treatments and predicting prognosis. Microsurgical treatment of a skull base SM remains a formidable challenge due to a large tumor size and critical neurovascular structure encasement <sup>3)</sup>.

## References

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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2802401/

Trivedi MM, Worley S, Raghavan A, Das P, Recinos PF, Barnett GH, Kshettry VR. Peritumoral Brain Edema and Surgical Outcome in Secretory Meningiomas: a matched cohort analysis. World Neurosurg. 2020 Oct 3:S1878-8750(20)32170-7. doi: 10.1016/j.wneu.2020.09.151. Epub ahead of print. PMID: 33022430.

Tao X, Wang K, Dong J, Hou Z, Wu Z, Zhang J, Liu B. Clinical features, surgical management, and prognostic factors of secretory meningiomas: a single-center case series of 149 patients. J Neurooncol. 2017 Nov 15. doi: 10.1007/s11060-017-2671-x. [Epub ahead of print] PubMed PMID: 29143274.

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