Olfactory groove meningioma complications

Higher complication risk is associated with larger tumors and greater perilesional edema. Pre-operative dexamethasone for 3-5 days versus shorter periods may reduce the risk of complications. Mukherjee et al. describe a characteristic pattern of perilesional edema termed 'sabre-tooth' sign, whose presence is associated with a higher complication rate and may represent an important radiological prognostic sign. Elective post-operative ventilation for patients with high-risk tumors may reduce the risk of complications. [1].

Olfactory disturbance

The olfactory disturbance is a common complication that occurs following the surgical resection of olfactory groove meningiomas (OGMs). There is little evidence on the best transcranial approach that minimizes rates of postoperative olfactory disturbance. The objective of this systematic review and meta-analysis is to compare smell outcomes after OGM resection in unilateral versus bilateral transcranial approaches.

A systematic review of the literature and meta-analysis was conducted using PUBMED, SCOPUS, and EMBASE in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines. The primary endpoint was incidence of new olfactory disturbance defined as anosmia or hyposmia, or both. Patients were classified as undergoing either a unilateral or bilateral approach. Data on presence of new postoperative olfactory deficits were used to generate standardized mean differences and 95% confidence intervals.

Results: Ten studies met the inclusion criteria for quantitative analysis, comprising 342 patients. A total of 216 patients underwent unilateral approaches while 126 underwent resection via bilateral approach. In the unilateral approach cohort, 17.1% experienced new postoperative olfactory disturbance following resection, compared with 19.2% of patients in the bilateral approach cohort. Forest plot did not reveal any significant difference in the incidence of new olfactory disturbance following either unilateral or bilateral approaches.

Conclusions: Our data suggest that there is no significant difference between the investigated transcranial approaches and postoperative olfactory disturbances. Accordingly, our study suggests that further investigation with introduced experimental control could provide more insight into the capabilities and drawbacks of each route in relation to olfactory outcomes [2].

1)
Mukherjee S, Thakur B, Corns R, Connor S, Bhangoo R, Ashkan K, Gullan R. Resection of olfactory groove meningioma - a review of complications and prognostic factors. Br J Neurosurg. 2015 Jul 15:1-8. [Epub ahead of print] PubMed PMID: 26174632.
2)
Bamimore MA, Marenco-Hillembrand L, Ravindran K, Perdikis B, Rosado-Philippi J, Jeevaratnam S, Donaldson AM, Olomu OU, Chaichana KL. Smell Outcomes in Olfactory Groove Meningioma Resection Through Unilateral versus Bilateral Transcranial Approaches: A Systematic Review and Meta-analysis. World Neurosurg. 2022 Apr;160:22-32. doi: 10.1016/j.wneu.2022.01.034. Epub 2022 Jan 13. PMID: 35033688.