Olfactory groove meningioma surgery approaches

- Modified Endoscopic Denker's Approach for a Meckel's Cave Meningioma: 2-Dimensional Operative Video
- Skull Base Collision Tumors: Giant Non-functioning Pituitary Adenoma and Olfactory Groove Meningioma
- Factors predicting seizure outcome after surgical excision of meningioma: SOLID-C guideline for prophylactic AED
- Differentiating Spinal Pathologies by Deep Learning Approach
- Dose Escalated Radiotherapy is Associated with Improved Outcomes for High Grade Meningioma
- Supracerebellar "flyover" Approach to Dumbbell Falcotentorial Meningioma Encasing the Galenic Venous System
- Novel Advances in Treatment of Meningiomas: Prognostic and Therapeutic Implications
- Efficiency and safety of optic canal unroofing in tuberculum sellae meningiomas: a meta-analysis and systematic review

The most common surgical approaches for removing olfactory groove meningiomas are the bifrontal and pterional approaches. When using a midline transbasal approach, the surgical corridor is through either an interhemispheric or a bifrontal approach and subfrontal route. This requires ligation and division of the superior sagittal sinus, which entails some risk of venous infarction and cerebral edema.

Open approaches are still gold standard. These approaches are a modification of pterional approach. Unilaterally or bilateral subfrontal approaches with or without orbital osteotomy.

Conversely, the pterional approach has the advantage of early dissection of the posterior neurovascular complex.

Individualized surgical strategy is necessary for mitigating the postoperative complication rate, and the possibility of recurrence in the management of OGMs. The exact role of less invasive, endoscopic approaches in the management of these patients remains to be defined.¹

Bilateral olfactory groove meningioma surgery approach

Unilateral olfactory groove meningioma surgery approach
Endoscopic Endonasal Approach

Endoscopic Endonasal Approach for Olfactory Groove Meningioma.

Transorbital Approach

Transorbital Approach for Olfactory Groove Meningioma

Systematic Review and Meta-Analysis

Consensus is limited regarding optimal transcranial approaches (TCAs) for the surgical resection of olfactory groove meningiomas (OGMs). This systematic review and meta-analysis aims to examine operative and peri-operative outcomes of unilateral compared to bilateral TCAs for OGMs. Methods: Electronic databases were searched from inception until December 2019 for studies delineating TCAs for OGM patients. Patient demographics, pre-operative symptoms, surgical outcomes, and complications were evaluated and analyzed with a meta-analysis of proportions. Results: A total of 27 observational case series comparing 554 unilateral vs. 451 bilateral TCA patients were eligible for review. The weighted pooled incidence of gross total resection is 94.6% (95% CI, 90.7-97.5%; I² = 59.0%; p = 0.001) for unilateral and 90.9% (95% CI, 85.6-95.4%; I² = 58.1%; p = 0.003) for bilateral cohorts. Similarly, the incidence of OGM recurrence is 2.6% (95% CI, 0.4-6.0%; I² = 53.1%; p = 0.012) and 4.7% (95% CI, 1.4-9.2%; I² = 55.3%; p = 0.006), respectively. Differences in oncologic outcomes were not found to be statistically significant (p = 0.21 and 0.35, respectively). Statistically significant differences in complication rates in bilateral vs. unilateral TCA cohorts include meningitis (1.0 vs. 0.0%; p = 0.022) and mortality (3.2 vs. 0.2%; p = 0.007). Conclusions: While both cohorts have similar oncologic outcomes, bilateral TCA patients exhibit higher post-operative complication rates. This may be explained by underlying tumor characteristics necessitating more radical resection but may also indicate increased morbidity with bilateral approaches. However, evidence from more controlled, comparative studies is warranted to further support these findings.

