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Endoscopic transsphenoidal vs. transcranial in patients with tuberculum sellae meningiomas: A meta-analysis

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Statement of the Problem: Tuberculum sellae meningiomas (TSMs) are a distinctive subgroup of meningiomas in the suprasellar space, accounting for 5%–10% of all intracranial meningiomas. Traditionally, these tumors have been excised through a variety of transcranial approaches (TCA). The endoscopic trans-sphenoidal approach (ETSA) has been recently used to treat TSMs. The relative risks and benefits of the approach remain incompletely defined and the effectiveness of this approach also remains uncertain and controversial. A meta-analysis was performed to compare the complications and outcomes between ETSA and TCA for TSMs with comparative cohort studies, in order to enhance our understanding of the current outcomes of ETSA for TSMs before the techniques become more widely used.

Methodology: A meta-analysis of studies that compared ETSA with TCA was conducted by searching the literature. Data related to post-operative complications, gross total resection (GTR) and visual improvement was pooled to compare and analyze the effects of two treatment approaches for TSMs.

Findings: There was no statistically significant difference between ETSA group and TCA group in the total complications [RR=1.47, 95% CI (0.67, 3.24), p=0.34], complications of non-CSF leak [RR=0.74, 95% CI (0.38, 1.47), p=0.40], visual improvement [RR=1.22, 95% CI (0.78, 1.92) p=0.38], GTR [RR=1.10, 95% CI (0.68, 1.77), p=0.70].

Conclusion: ETSA is comparable with TCA in terms of GTR. Although there is no significant difference in the total complications and complications of non-CSF leak between the two techniques in present study, ETSA may be the more appropriate approach to achieve the better visual outcomes in patients with TSMs, due to the minimal surgical manipulations of the optic pathways and the protection of the vascular supply of the under face of the optic apparatus by an arachnoid plane.

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