

ABSTRACT NO:02
RESEARCH ARTICLE**Endoscopic Endonasal Versus Endoscopic Supraorbital Keyhole Surgery for Craniopharyngioma Resection: A 15-Year Single-Center Retrospective Cohort Study**Ajit Phuyal¹, Burhan Ul Haq², Hammad Nasir Malik³, Simon John⁴, Kanwal Ali⁵, Siraj Ul Haq⁶**Abstract**

Objective: To compare extent of resection and postoperative visual outcomes between endoscopic endonasal and endoscopic supraorbital keyhole approaches for craniopharyngioma, and to assess differences in CSF leakage, endocrine deficits, and recurrence.

Methods: This retrospective cohort study reviewed records of patients treated for craniopharyngioma at Mayo Hospital, Lahore, Pakistan, between 19 June 2007 and 7 September 2022; record review and analysis were conducted from 6 December 2025 to 14 March 2026. Of 67 patients assessed, 60 met eligibility criteria: 30 underwent endoscopic endonasal surgery (Group A), and 30 underwent endoscopic supraorbital keyhole craniotomy (Group B). Co-primary outcomes were gross-total resection (GTR) on 48-hour MRI and visual improvement at 3 months; CSF leak, endocrine deficits, and recurrence were assessed descriptively, with differences analysed using chi-square tests, relative risks (RR), and 95% confidence intervals (CI).

Results: Suprasellar/intrasellar lesions were present in 22 (73.3%) patients in Group A versus 10 (33.3%) in Group B, whereas retrochiasmatic/intraventricular tumours occurred in 4 (13.3%) versus 12 (40.0%), respectively. GTR was achieved in 25 (83.3%) patients in Group A versus 18 (60.0%) in Group B ($p=0.045$; RR 1.39, 95% CI 1.00–1.93). Visual improvement occurred in 26 (86.7%) versus 19 (63.3%) patients, respectively ($p=0.037$; RR 1.37, 95% CI 1.03–1.82). CSF leakage occurred in 4 (13.3%) patients in Group A versus 1 (3.3%) in Group B. Endocrine deficits and recurrence were not significantly different between groups.

Conclusion: The endoscopic endonasal approach was associated with higher GTR and visual improvement rates, partly reflecting preferential allocation of midline tumours to this group. Both approaches remain complementary, with strategy individualized according to tumour anatomy and surgeon expertise.

Keywords: (Craniopharyngioma; Endoscopic endonasal surgery; Supraorbital keyhole craniotomy)

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