

ABSTRACT NO:08
RESEARCH ARTICLE**Clinical Outcomes and Prognostic Factors Following Surgery for Supratentorial Intraventricular Tumours: A 15-year Experience**

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Abstract

Objective: Supratentorial intraventricular tumours (SIVTs) represent rare and surgically demanding subset of intracranial neoplasms, characterized by heterogeneous pathology, deep anatomical location, and significant perioperative risk. Due to their low prevalence, robust outcome-data and evidence-based surgical guidelines remain scarce. This study evaluated clinical characteristics, surgical outcomes, and predictors of adverse events in a large single-center cohort.

Methods: A retrospective study was conducted on patients operated for SIVTs between April 2010 – April 2025. The data was collected between November 2025 – January 2026. Presenting complaints, radiological and surgical details, and postoperative complications were analyzed. Functional outcomes were assessed using the modified Rankin Scale (mRS). Multivariate logistic regression identified predictors of gross total resection (GTR) and postoperative ventriculoperitoneal shunt (VPS) dependence. Survival analysis was performed using Kaplan-Meier methods.

Results: A total of 170 patients were included (mean age of 32.4 ± 15.7 years; 31(18.2%) were children). Headache 129(75.9%), nausea 68(40.0%), and vomiting 65(38.2%) were the most common presenting symptoms. Favourable preoperative mRS of 0-1 was noted in 133(79.6%) patients. Lateral ventricular tumours comprised 95(56%) of cases. GTR was achieved in 87/147(59.2%) patients. Postoperative complications occurred in 52/145(35.9%), including meningitis 9(6.2%), hydrocephalus 9(6.2%), and seizures 6(4.1%). No statistically significant predictors were identified for these complications. Multivariate logistic regression demonstrated that temporal transcortical-transventricular approach (OR 9.04; $p=0.041$) and low-grade tumours (OR 9.48; $p=0.006$) were independent predictors of GTR. Hydrocephalus at presentation showed a strong trend toward need of postoperative VPS (OR 7.68; $p=0.054$). During median follow-up of 13.8 months, recurrence was observed in 22.7% with a thirty-day mortality of 4.2%, both significantly worse in children and high-grade tumours.

Conclusion: Surgery for SIVTs carries meaningful risk but achieves favourable outcomes in most patients. Tumour grade and surgical approach are the strongest determinants of GTR, while preoperative hydrocephalus may guide anticipatory VP shunt planning. These findings can inform surgical decision-making and preoperative counselling in this rare tumour subset.

Keywords: Lateral and third ventricle tumours, Supratentorial ventricular tumours, Prognostic factors.

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