

ABSTRACT NO:17
RESEARCH ARTICLE**Microsurgical resection of skull base meningioma Operative Nuances, Challenges, and Outcome**Md. Ruhul Kuddus ¹, Robert Ahmed Khan ², Md. Hasanur Rahman ³, Ferdousi Tabassum ⁴**Abstract**

Objective: Skull base meningiomas represent a distinct subgroup of intracranial tumours because of their proximity to cranial nerves, major vascular structures, and the brainstem. Although advances in imaging, neuroanaesthesia, and skull base approaches, marked improvement in illumination devices, provision of improved haemostatic agents, greater availability of more precise surgical instruments, and better modalities for skull base reconstruction have led to an inevitable evolution of safe skull base neurosurgery, complete resection remains technically demanding. This study evaluates operative nuances, intraoperative challenges, and clinical outcomes following microsurgical resection of skull base meningiomas.

Methods: A retrospective analysis was performed on 55 patients who underwent microsurgical resection of skull base meningiomas of different location in Bangladesh Medical University from 01st April, 2018 to 30th June 2026. Tumour location, extent of resection, operative strategies, cranial nerve preservation, vascular management, postoperative complications, and functional outcomes were reviewed. Surgical techniques included tailored skull base approaches with microsurgical dissection under high magnification. Outcome was assessed using MRC grading, GOS and House- Brackmann scale where applicable.

Results: Gross total or near-total resection was achieved in the majority of patients. The principal operative challenges included tumour adherence to the internal carotid artery and its branches, encasement of cranial nerves, hypervascularity, and limited surgical corridors in petroclival lesions. Key operative nuances included early devascularization, internal debulking before arachnoid plane dissection, preservation of perforating vessels, and meticulous cranial nerve handling. Postoperative neurological status was stable or improved in most patients. Out of 55 patients 3 patients died due to post-operative complications. Hemiparesis developed in 2 patients. New cranial nerve deficits, tumour bed haematoma and cerebrospinal fluid leakage were the most common complications.

Conclusion: Skull base tumours pose a management challenge given their complex location and, as a result, the tumours and surgery can result in significant morbidity. Careful preoperative planning, individualized skull base approaches, and meticulous microsurgical technique are essential to maximize safe resection while preserving neurological function.

Key words: Meningioma; vascular invasion; Skull base.

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