

Intraventricular Glioblastoma: Case Report and Review of Literature Aqueel Pabaney MD; Kevin Reinard MD; Ian Yu Lee MD; Jack P. Rock MD, FACS Department of Neurological Surgery, Henry Ford Hospital, Detroit, MI, USA



#### Introduction

GBM most commonly occurs in frontal, temporal, parietal or overlapping lobes; however, intraventricular location has been sparingly mentioned in the literature. We report a case of young male patient who presented with a third ventricular GBM and underwent gross total resection without encountering any neurological deficits and continues to show no evidence of recurrence 10 months postoperatively. An exhaustive review of literature is also presented.

## Methods

Extensive electronic search of PubMed database was carried to identify reports of intraventricular GBM using keywords "glioblastoma", "GBM", "intraventricular", "third ventricle", "lateral ventricle", "fourth ventricle". References mentioned in the reports were pursued as well. Variables gathered from the reports included number of patients, patient age, gender, mode of presentation, location of tumor, surgical approach undertaken, adjuvant therapy administered and patient outcomes.

# Results

24 reports describing IV-GBM in 56 patients were found. Median age at presentation was 32 years (mean - 39 years; SD - + 22.76 years). There were 18 male and 7 female patients; gender was not reported for the remainder of the patients. Most of the patients presented with signs of increased intracranial pressure (18 patients). Three patients presented with a seizure. Most common location of the tumor was the lateral ventricle (40 cases). Surgery alone or surgery with adjuvant chemotherapy and radiation was the most common treatment modality, carried out in 35 patients. The tumor was approached surgically via transcortical route (19 patients) or interhemispheric, transcallosal route (22 patients). Median survival for reported cases was 14 months (+ 8.1 months).

## Conclusions

Intraventricular GBM are exceedingly rare tumors, most commonly found in the lateral ventricle. Transcortical or transcallosal route can be utilized to resect these tumors. However, the overall prognosis is grim with most patients dying within 2 years of diagnosis, despite adjuvant therapy.

## References

Zhang J, Shrestha R, Li J, Jiang S. Fourth ventricle glioblastoma. Clin Neurol Neurosurg. 2012 Oct;114(8):1164–7

Dumont AS, Farace E, Schiff D, Shaffrey ME. Intraventricular gliomas. Neurosurg Clin N Am. 2003 Oct;14(4):571–91.

Lee TT, Manzano GR. Third ventricular glioblastoma multiforme: case report. Neurosurg Rev. 1997;20(4):291–4

#### **Learning Objectives** By the conclusion of this session participants should be able to:

1. Identify presenting signs, symptoms and radiological features of intraventricular GBM

2. Plan surgical approaches to the lateral and third ventricle

3. Understand the natural history of intraventricular GBM



Preoperative Axial FLAIR MRI