Intraventricular Glioblastoma

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Figure 1. Axial (A) and coronal (B) views of gadolinium-enhanced T1-weighted MRI of the brain demonstrating a nodular-enhancing lesion along the left lateral ventricle extending into the right lateral ventricle (arrow), associated with vasogenic edema. MRI indicates magnetic resonance imaging.

An 83-year-old man with a history of atrial fibrillation presented to the emergency department after a witnessed convulsion. Gadolinium-enhanced T1-weighted magnetic resonance imaging of the brain revealed a nodular enhancing lesion along the left lateral ventricle extending into the right lateral ventricle, associated with vasogenic edema (Figure 1). A stereotactic biopsy demonstrated glioblastoma isocitrate dehydrogenase (IDH)-1 and IDH-2 wild-type and nonmethylated *O*⁶-methylguanine DNA methyltransferase promoter status (MGMT). Intraventricular location as primary presentation accounts for less than 1% of all cases of glioblastoma, with few cases described in the literature.

The ventricular-subventricular zone (V-SVZ) is found in the walls of the lateral ventricles. It harbors neural stem cells during development and retains proliferative capacity into adulthood.¹ The V-SVZ is a potential niche for gliomagenesis,

and tumors located in its proximity can be highly aggressive.² While ventricular location of glioblastoma is associated with poor survival and an unfavorable molecular profile,³ the tumor biology differences that promote invasiveness and aggressiveness in ventricular gliomas remain unknown. Older age has

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been found to be the strongest predictor of mortality.⁴ Nonsurgical treatment with concurrent chemoradiation is generally attempted as aggressive surgical resection can be technically challenging and associated with significant morbidity. Therapies targeting the V-SVZ are under active investigation in glioblastoma and may include tumor-treating fields.

Authors' Note

Catherine R. Garcia contributed to case concept and design, acquisition of data, interpretation of data, and manuscript writing. Mauricio F. Villamar contributed to case concept and design, interpretation of data, and critical revision of the manuscript for intellectual content. John L. Villano contributed to interpretation of data and critical revision of the manuscript for intellectual content.

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Declaration of Conflicting Interests

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