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Diffuse midline glioma, H3K27-altered: a rare presentation with gliomatosis cerebri growth pattern and progression toward midline

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Abstract

A limited number of cases involving non-midline lesions have been documented in diffuse midline glioma (DMG), H3K27-altered, for which a definitive classification has yet to be developed. Additionally, no studies have investigated the temporal evolution of imaging features in diffuse non-midline gliomas. We herein report a case of DMG, H3K27-altered, initially presenting with a gliomatosis cerebri-like appearance, cystic lesions in the right frontal lobe, and progression toward the brainstem. Histopathological analysis and comprehensive genomic profiling indicated glioblastoma (GBM) or DMG, H3K27-altered. The patient was diagnosed with GBM because of imaging characteristics atypical for DMG; however, 9 months after the initial diagnosis, a pontine glioma emerged. This case indicates that DMG, H3K27-altered, may exhibit atypical characteristics, including non-midline cystic lesions, that can subsequently progress to pontine gliomas. Considering the limited therapeutic options available for this malignancy, the early recognition of such atypical presentations is crucial for achieving a timely and accurate diagnosis of DMG, H3K27-altered.

Keywords: Cystic lesion; Diffuse midline glioma; Diffuse non-midline glioma; Gliomatosis cerebri; H3K27-altered.

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