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Diffuse midline glioma H3 K27M-mutant in adults: A report of six cases and literature review

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Abstract

Aim: Diffuse midline glioma (DMG) H3 K27M-mutant is a specific entity that, as the name indicates, tends to occur in midline structures including the thalamus, brainstem, and spinal cord. DMG predominates in children, is an aggressive tumor with poor prognosis, and is considered a WHO grade IV tumor regardless of histological features. The exact frequency of these mutations in adults diagnosed with glioma in the midline is unknown.

Materials and methods: We report a series of 6 more adult cases, and we critically review the current literature on adults with DMG H3 K27M-mutant.

Results: There were 5 males and 1 female. The age ranged from 26 to 52 years (median 39 years). All cases showed astrocytic differentiation, with positive staining for H3 K27M protein, and loss of H3 K27me in the tumor cells confirming the diagnosis.

Conclusion: H3 K27M-mutant midline glioma can occur in adults, affecting midline structures. Increasing awareness of the reporting pathologists of this entity might help in a better determination of the frequency of mutant DMG in adults as well as better diagnosis and patient counseling of the outcome.