Brainstem oligodendroglial tumors in children: two case reports and review of literatures.


Abstract

PURPOSE: There is little information on pediatric oligodendroglial tumor located in the brainstem because of its rarity.

METHODS: Here, we present two pediatric cases of pontine oligodendroglial tumors with radiological findings atypical for diffuse intrinsic pontine glioma.

RESULTS: The first patient was an 8-year-old boy. Brain magnetic resonance imaging (MRI) demonstrated diffuse high-intensity changes in the pons, left middle cerebellar peduncle, and part of the left cerebellar hemisphere on T2-weighted and fluid-attenuated inversion recovery images, with an enhanced spot lesion in the left cerebellar hemisphere. The pathological diagnosis was anaplastic oligodendroglioma, and we identified a mutation in histone H3.3 in the tumor specimen. He succumbed to massive disseminated relapse 7 months from diagnosis despite local radiation therapy. The second patient, a 2-year-old girl, was diagnosed with oligoastrocytoma. Brain MRI revealed a large mass in her rostral pons extended to the fourth ventricle with obstructive hydrocephalus. The tumor recurred with intracranial dissemination 56 months post-surgery.

CONCLUSIONS: Pediatric brainstem oligodendroglial tumors can include histone H3.3-mutated tumors and have a tendency to disseminate throughout the neuroaxis at the time of relapse.

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