JOURNAL ARTICLE

Aggressive behavior in a molecularly benign tumor: The diagnostic odyssey of a pediatric pilocytic astrocytoma with initial high-grade histologic features and rapid recurrence

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Extract

To the Editor:

Pediatric gliomas represent the most common type of brain tumors in children, encompassing a broad spectrum of histological subtypes and biological behaviors.[1,2] These tumors are categorized based on their histopathological features and molecular profiles, ranging from low-grade gliomas such as pilocytic astrocytomas to high-grade diffuse gliomas.[2] Low-grade gliomas account for the majority of pediatric gliomas and are generally associated with favorable outcome.[3] High-grade gliomas, on the other hand, are rare but aggressive, with poor survival rates despite intensive treatment.

Molecular profiling has become an essential tool in the classification and diagnosis of pediatric gliomas. Key genetic alterations such as *BRAF* mutations and fusions in low-grade gliomas and *H3K27M* mutations in high-grade gliomas have significant diagnostic, prognostic, and therapeutic implications.[4] This shift toward molecular-based classification aligns with the 2021 WHO Classification of Central Nervous System Tumors, emphasizing the importance of integrating molecular and histopathological data to optimize patient management.[2] Further research is essential to uncover these markers and refine treatment strategies. We report a rare case of a pediatric pilocytic astrocytoma that exhibited aggressive clinical behavior, highlighting the diagnostic and therapeutic challenges posed by discordant histopathological and molecular findings.

Issue Section: Letter to the Editor