

# Malignant glioblastomatous transformation of a low-grade glioma in a child

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## Abstract

**Background** The term of low-grade glioma addresses a favorable clinical outcome with indolent histological features in general consideration; however, recent studies underline the inconsistency, which originates from the accumulation of different histologic subtypes in this terminology. The malignant transformation of a low-grade glioma is unusual but presents a poor prognosis.

**Case history** We report a case of a 12-year-old boy, who was referred for complaints of recurrent seizures. His physical examination was unremarkable, but it was learned that a peripheral mass lesion located on the left posterior parietal lobe—which had been thought to be a low-grade glioma—had been detected on a magnetic resonance imaging 2 years ago at a different hospital. The patient was then treated with valproate and carbamazepine for the seizures and advised to be followed up without any additional diagnostic and therapeutic studies for his

suspected low-grade glioma. A recent magnetic resonance imaging study showed enlargements of the mass and surrounding edema with additional necrosis. Surgical excision of the tumor was performed. After the diagnosis of glioblastoma multiforme, the patient received radiation therapy and chemotherapy with a good clinical recovery without any evidence of residue or recurrence at 12-month follow-up.

**Conclusion** The first line treatment modality in the management of low-grade glioma—especially in suitable patients—is clearly surgery. The gross total resection guarantees the distinguishing of the histological types of the low-grade gliomas and reflects the biologic behavior of these tumors. Observation without surgery must be reserved for selected unoperable cases.

**Keywords** Children · Low-grade glioma · Malignant transformation · Observation without surgery · Surgical resection

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## Introduction

The term of low-grade glioma (LGG) encompasses the entire spectrum of WHO grade I (roughly equivalent to benign or an expected survival of >10 years) and grade II (roughly equivalent to low-grade malignant or an expected survival of 5–10 years) gliomas, with favorable clinical outcome and indolent histological features in general consideration; however, several studies underline the inconsistency, which originates from the accumulation of heterogeneous group with distinct histopathological features and biological behavior in this terminology [1–10]. This group included different neoplasms such as ependymomas, pilocytic astrocytomas, pleomorphic xanthoastrocytomas,