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Glioblastoma Multiforme in Children: Report of 13 Cases and Review of the Literature.

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Abstract

We present clinical and histopathologic data from 13 children who underwent craniotomy for newly diagnosed glioblastoma multiforme. Clinical characteristics were compared to those in adult patients (n = 403). The mean age of the children was 10.4 years. The male/female ratio was 3.3:1. The localization was infratentorial in 6 cases (brainstem, n = 4; cerebellum, n = 2) and supratentorial in 7 cases (frontal, n = 2; parietal, n = 3; temporal, n = 2). Infratentorial localization was observed solely in children from 0-10 years, whereas supratentorial location was found in children between the age of 11 and 21 years. Surgical resection was followed by radiotherapy in 11 cases and additional chemotherapy in 8 cases. Giant cell glioblastoma multiforme was found in 2 cases (15%, vs 1-5% in adults). The mean Ki-67 proliferation index was 29.4% (vs 25.6% in adults). There were no significant differences in histologic morphology between children and adults. The total survival time was 90 weeks (vs 47 weeks in adults). One patient is still alive after 8 years. Predictive factors of prolonged survival were the extent of tumor resection and radio- and/or chemotherapy after resection. Multidisciplinary treatment of glioblastoma in childhood might lead to better median survival than in adults. Infratentorial tumor location was observed exclusively in children younger than 11 years old.

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