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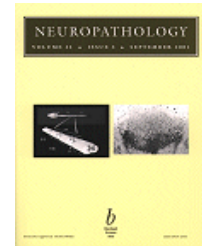
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Radiation-induced glioblastoma in a medulloblastoma patient: A case report with molecular features

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Abstract

Case Report

Radiation-induced glioblastoma in a medulloblastoma patient: A case report with molecular features

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Abstract

We report a case of glioblastoma (GBM) occurring 8 years after radiation therapy for a medulloblastoma. A 15-year-old boy underwent surgery and radiotherapy for a medulloblastoma and 8 years later he developed a second tumor at the same site. The second lesion showed different histological and molecular features, was diagnosed as a glioblastoma and fulfilled the criteria of radiation-induced neoplasm. Mutational analysis of the p53 gene showed a C to G transition at codon 176 in tumor DNA. LOH was detected at 17p and 19q. The tumor also showed O6-

methylguanine-DNA methyl-transferase (MGMT) promoter methylation and no amplification of EGF receptor. In conclusion, the radiation-induced MGMT hyper-methylation and p53 mutations may have a role in the development of a subgroup of radio-induced glioma (RIG), suggesting that these molecular alterations directly cooperate in the genesis of the post-irradiation GBM. Moreover RIGs seem to be a heterogeneous group of tumors that may resemble either primary or secondary GBM.

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