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Histopathologic and immunohistochemical profile of spinal glioblastoma: a study of six cases.

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Abstract

Spinal intramedullary glioblastomas are uncommon tumors and are known to have a very poor prognosis. Only a few studies in the literature have described their histopathological characteristics. We describe the detailed histopathological and immunohistochemical profiles of six cases of spinal glioblastoma. Most of the tumors were located in the cervical or cervicothoracic region. The majority of the patients were young adults (mean age 34.8 years), presenting with a short duration of symptoms of 2 months or less. Their histopathological features were similar to cerebral glioblastoma. Diverse vascular changes like microvascular proliferation, sprouting angiogenesis, sclerosed and thrombosed vessels, along with field necrosis were prominent findings. All tumors were positive for GFAP and negative for EMA. The MIB-1 labeling index was very high (mean $16.7 \pm 3.2\%$). Five out of six tumors were immunoreactive for p53 protein, and only two showed over-expression of EGFR protein. The predominant expression of p53 in these young patients suggests that spinal glioblastomas are similar to secondary glioblastoma in the cerebral hemispheres, despite the short duration of symptoms in them and vascular changes that are similar to those noted in primary glioblastoma. These observations support the fact that spinal glioblastomas are heterogeneous tumors underlined by complex molecular pathways. Nevertheless, inactivation of the p53 tumor suppressor pathway could play a major role in the genesis of these neoplasms.

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