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Glioblastoma multiforme extracranial metastasis in the pediatric patient – Case report

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Introduction: GBM in children is a drastic diagnosis. Usually occurs in less of 3% of all intracranial tumors in children and extracranial metastasis of GBM is a very rare condition, with reported frequency of only 0.44%.

Methods: A 4 year old boy, white, presented during the last 3 months before hospitalisation irritability, headache and vomiting. Finally, stupor was settled and a CT scan was done at another hospital. The image showed an obstructive hydrocephalus and hyperdense mass with peripheral oedema. A VP shunt was placed and the boy was referred to our service. A magnetic ressonance (MR) showed an extense, dense and homogenous hypointense lesion on T1-weighted images and notable decay on T2 images in the cerebelar vermis. A subocciptal craniotomy was performed and transverminal approach, with total mass removal.

Results: The boy recovery completely, unneventfully and was early discharged. The pathology remarks were: necrosis and neovascularization. Necrosis was in large areas band-like foci surrounded by tumors cells, displaying pseudopalisades. The immunohystochemistry was positive to glial fibrilar acidific protein (GFAP) and O6-methylguanine-DNA methyltransferase (MGMT). The patient thus received an adjuvant treatment with temozolamide a radiotherapy. Eighteen months later, he presented himself with sudden tetraparesis with sensitive level in C4. The MR showed an extracranial metastasis in the cranial-cervico transition and cervical spinal cord. The patient developed rapidly aspirative pnemonia and died from sepsis.

Conclusions: GBM causing an extracranial metastasis is a very rare condition mostly due to the short span of life of these patients. The lack of lymphatic system, dense dural membrane and the immunological lost may explain the formation of extracranial metastasis. The positivity of immnuohystochemistry TP53 and O6-methylguanine-DNA methyltransferase (MGM), whose are tumor suppressor genes, could be implicated in this GBM resistance to radiation and chemotherapy.