GLIOSARCOMA OF THE PINEAL REGION WITH CEREBELLAR METASTASIS: CASE ILLUSTRATION

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A very rare case of gliosarcoma of the pineal region with cerebellar metastasis is presented.
A few cases of glioblastoma and fibrosarcoma have already been published however there was no reported case with gliosarcoma at the pineal region even with cerebellar metastases.

Keywords: *gliosarcoma, pineal region, cerebellar metastasis*

A PINEALIS RÉGIÓ GLIOSARCOMÁJA KISAGYI METASZTÁZISSAL: ESETISMERTETÉS
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A szerzők a pinealis régióban kialakult gliosarcoma nagyon ritka esetét ismertetik kisagyi áttéttel. Glioblastoma és fibrosarcoma nagyon ritkán fordulnak elő a pinealis régióban, de gliosarcoma előfordulásáról kisagyi metasztázissal még nem számolt be az irodalom.

Kulcsszavak: *gliosarcoma, pinealis régió, cerebellaris metasztázis*

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Case illustration

A 35-years old male presented with headache and diplopia. Magnetic resonance T1 weighted imaging (MRI) revealed a hyperintense mass after contrast administration in the region of corpus pineale. **(Figure 1.)**. Germinoma was suspected, but after 20 Gy of radiotherapy the progression of the tumour was observed. Debulking of the tumour was performed through a suboccipital supracerebellar approach and internal shunt was inserted. The histology revealed a gliosarcoma (**Figures 2.A–C**). The radiotherapy was completed to 50 Gy. Control MRI revealed residual tumour with no hydrocephalus.

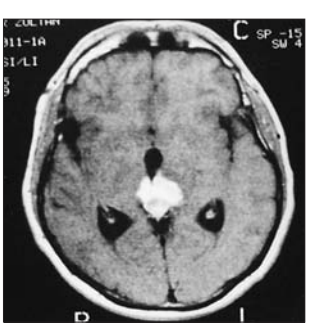

Figure 1. *Preoperative axial T1-weighted MRI obtained with contrast material demonstrates a hyperintense mass in the region of corpus pineale, in the posterior part of both thalamus and the region of aqueductus cerebri*

Three months later the patient was readmitted with increasing headache and diplopia. MRI showed the progression of the residual tumour with left cerebellar metastasis **(Figure 3.)**. Despite of 2 cycles of temozolomide his neurological status deteriorated and died 6 months following the operation.

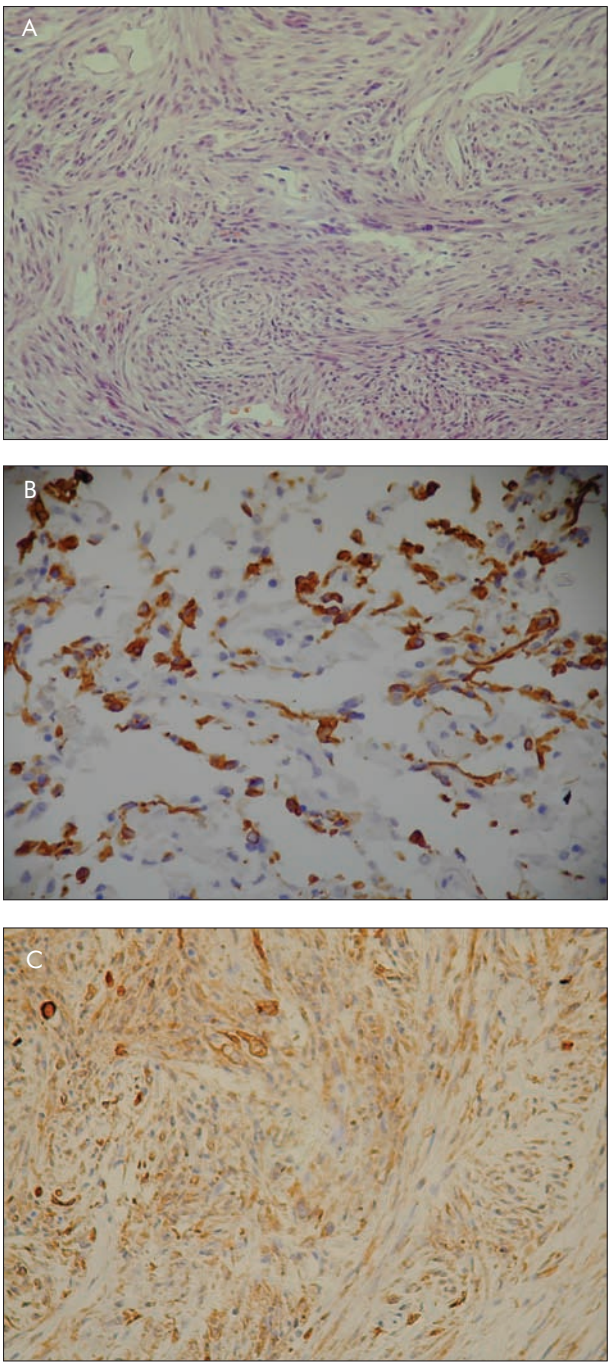

Figure 2. *Photomicrographs showing light microscopy studies of surgical specimens obtained from pineal region tumour. Two types of neoplastic tissues intersecting each other. One of them is a pleiomorphic glioma with various stages of dedifferentation and mesenchymal components with areas of pleiomorphic spindle-shaped cells arranged in parallel rows and areas composed of proliferated or neoplastic vessels* **(A)** *(HE, original magnification × 200). The gliomatous areas showed intensively positive glial fibrillary acidic protein staining* **(B)** *(GFAP, original magnification × 200), while mesenchymal components were strongly Vimentin positive* **(C)** *(Vimentin, original magnification × 200)*

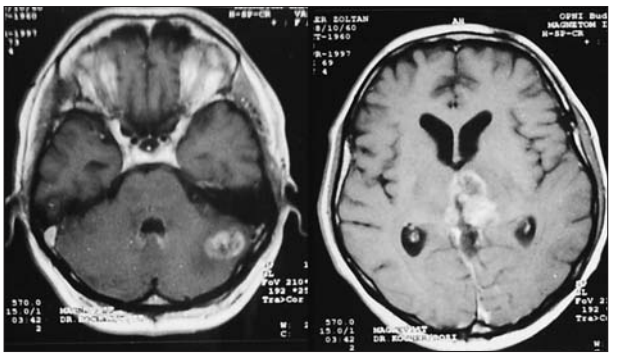

Figure 3. *Postoperative axial T1-weighted MRI obtained with contrast material demonstrates the progression of the residual tumour in the pineal region with left cerebellar metastasis*

Discussion

Tumours of the pineal region comprise 0.4-1.0% of all brain tumours and gliosarcoma is approximately 2% of all glioblastomas[1–3]. A few cases of glioblastoma[1] and fibrosarcoma[3] have already been published however there was no reported case with gliosarcoma at the pineal region even with cerebellar metastases. Previous observations confirm the hypothesis that at least part of the sarcomatous components of gliosarcomas originate from vascular endothelial proliferation and represent the final stage of a process starting with the endothelial hyperplasia in anaplastic gliomas[4], but recent genetic analysis point to a monoclonal origin[5]. Although there are a variety of tumours reflecting the multicellular composition of the pineal region, which is the case with our reported patient with of gliosarcoma, the clinical signs and symptoms are similar.

REFERENCES

1. *Amini A, Schmidt RH, Salzman KL, Chin SS, Couldwell WT.* Glioblastoma multiforme of the pineal region. J Neurooncol 2006;79(3):307-14.
2. *Demirci S, Akalin T, Islekel S, Ertan Y, Anacak Y.* Multiple spinal metastases of cranial gliosarcoma: a case report and review of the literature. J Neurooncol 2008;88(2):199-204.
3. *Liu Z, Salamat MS, Hafez GR, Mehta MP, Robins HI, Amoli RS, et al.* Pineal sarcoma. Acta Neurochir (Wien) 2002;144(1):89-92.
4. *Slowik F, Jellinger K, Gazsó L.* Gliosarcomas: histological, immunohistochemical, ultrastructural, and tissue culture studies. Acta Neuropathologica 1985;67:201-10.
5. *Reis RM, Könü-Leblebicioglu D, Lopes JM, Kleihues P, Ohgaki H.* Genetic profile of gliosarcomas. Am J Pathol 2000;156(2):425-32.