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Association between cavernous angioma and cerebral glioma. Report of two cases and literature review of so-called angiogliomas

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Summary

The association between vascular malformations and cerebral gliomas is unusual. While the association between cavernous angioma with gliomatous lesions is even more rare, it is considered by certain authors to be a particular pathological entity termed angioglioma. The authors report on two cases of association of a cavernous angioma with a ganglioglioma and an oligodendroglioma respectively. Subsequent review of the literature on the so-called angiogliomas was conducted. In the author's opinion, the entity of angiogliomas represents a general spectrum of angiomatous neoplasms that include gliomatous tumors, in the majority low-grade gliomas, associated with a major vascular component.

KEY WORDS. Brain tumor. Glioma. Cavernous angioma. Angioglioma

Asociación entre angioma cavernoso y glioma cerebral. Reporte de dos casos y revisión de la literatura acerca de los llamados angiogliomas

Resumen

La asociación entre las malformaciones vasculares y los gliomas cerebrales es inusual. Mientras que la asociación entre angioma cavernoso con lesiones gliomatosas es aún más rara, es por esto considerado por algunos autores como una entidad patológica particular llamada angioglioma.

Los autores reportan dos casos de asociación de un angioma cavernoso con una ganglioglioma y un oligodendroglioma, respectivamente. Además se realizó una revisión de la literatura sobre los llamados angiogliomas.

En opinión de los autores, la entidad de los angiogliomas se presenta dentro de un espectro general de neoplasias angiomatosas, que incluyen tumores cerebrales, en su mayoría gliomas de bajo grado, asociados a su vez, con un componente vascular importante.

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PALABRAS CLAVE. Tumor cerebral. Glioma. Angioma cavernoso. Angioglioma.

Introduction

Councillmann in 1930[3] was the first to report the name of "angiogliomas" describing a cerebellar tumor with a huge vascular component. From Councillmann until nowadays, only a few authors have reported this entity along with an attempt of a better definition of such pathology.

Indeed, Roussoy and Oberling in 1930[14] classified CNS neoplams and described as well the angioglioma that it was defined as a tumor with a glial part, generally of low-grade, along with a notable vascular component. Although, Rubinstein[15] accepted the term angioglioma; in a more recent publication[16] he suggested the restriction of the term angiogliomas to denote a mixed tumor composed of an hemangioblastoma and astrocitoma. Sugita et al.[9], after reporting a case of a xanthoastrocitoma highly vascularized, proposed the use of the term angiomatous glioma intending to describe a malignant glial neoplasms highly vascularized, while leaving the term angiogliomas just for mixed neoplasms composed of a low-grade glioma and a vascular malformation of any kind.

The presence of two angiogliomas in our own series of low-grade gliomas leaded us to review the literature on this rare pathological condition[2,3,8,12,13,14].

Case 1

A 16-year-old girl was admitted in our department for progressive bilateral facial palsy. Neurological examination evidenced a central bilateral VII cranial nerve dysfunction. A brain MRI with and without contrast demonstrated a hypothalamic chiasmatic tumor with disomogenous contrast enhancement, irregular borders and slight perilesional edema (Fig1). A bilateral subfrontal approach was carried out with subtotal resection of the tumor. During surgery, an intracerebral mass with thrombosed vessels and considerable vascular lakes was found. Histological diagnosis was ganglioglioma with glial component of pyloid type and associated vascular component of angiomatous type (angio-

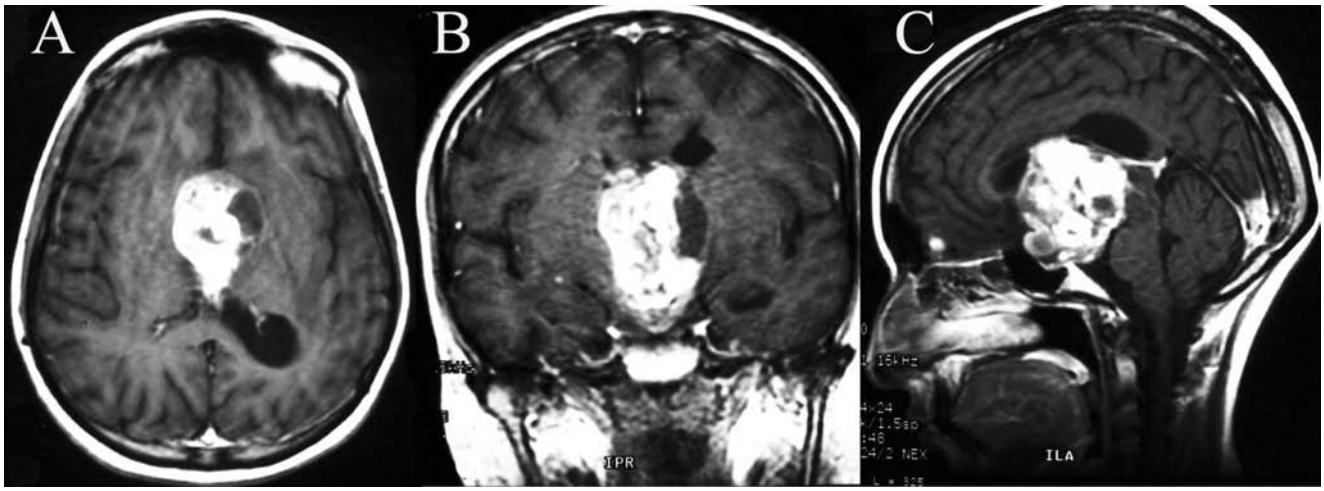

Figure 1. *Brain MR T1-weighted axial (a), coronal (b) and sagittal (c) images showing a hypothalamic- chiasmatic tumor with disomogenous contrast enhancement, irregular borders and slight perilesional edema.*

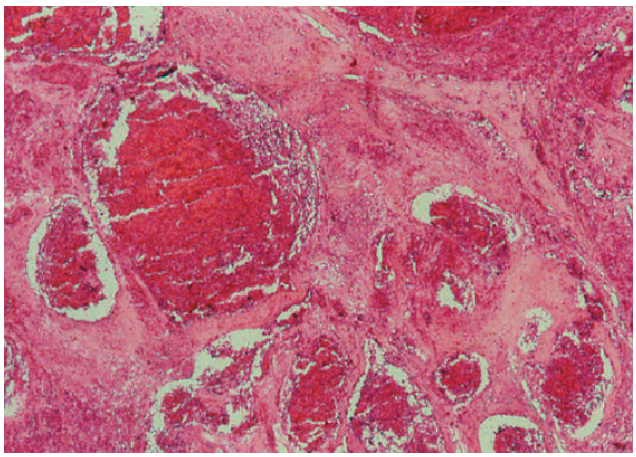

Figure 2a. *Vascular component of neoplasia (evident angiomatous aspect). H&E. Original magnification 200x.*

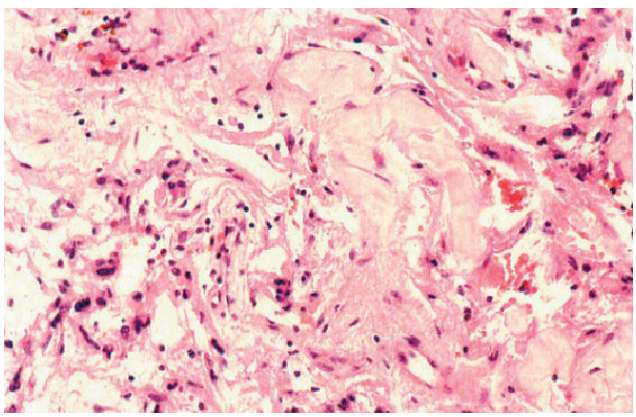

Figure 2b. *Interface between vascular component (in this case with hyalinized ectasic walls) and the glial neoplasia. H&E. Original magnification 100x.*

glioma). The vascular component was observed in some regions of the tumoral mass. It presented itself with hyalinized ectasic vascular channels, perivascular hemosiderin deposits, gliosis and vascular calcifications. The gliomatous nature of the tumor was pathologically obvious, although in some points of the tumoral mass it was nearly darkened from this particular architecture of the vascular component (Fig 2a, b, c). Electron microscopy was not performed.

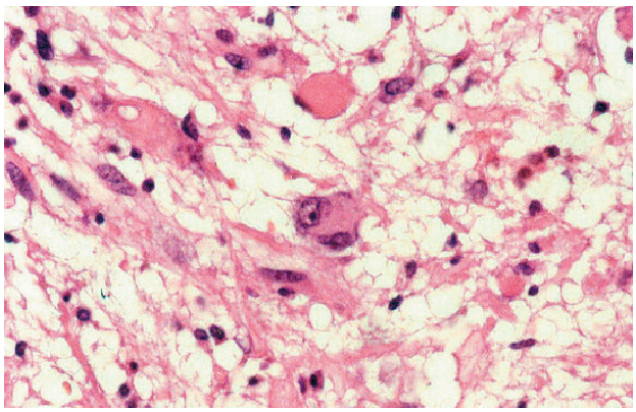

Figure 2c. *Particular of the ganglioglial component (one binuclear gangliar cell in the center). H&E. Original magnification 200x.*

Postoperative course was complicated with a panhypopituitarism, which improved with pharmacological replacement therapy. Clinical and radiological follow-up of 76 months showed a non growing residual tumor and stable medical condition.

Case 2

A 38-year-old men was admitted in our department for bifrontal headaches for six months. Neurological exam was normal. A brain MRI with and without contrast demonstrated a right frontal lobe tumor with disomoge-