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Intraventricular Schwannoma: A Case Report

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Abstract **Case Report**

Ventricular schwannomas are very uncommon. We report such a tumor in the right lateral ventricle of a 17-year-old young man. The various etiopathogenic hypotheses are discussed.

Keywords: Schwannoma; Intraventricular tumor.

INTRODUCTION

Schwannomas account for approximately 8% of primary intracranial tumors, the vast majority originating from the vestibular nerve vestibular nerve. Intraventricular localization of a schwannoma of a schwannoma is exceptional, with only eight cases described in the literature. We report the case of a schwannoma of the lateral ventricle and discuss its etiopathogenesis.

OBSERVATION

A 17-year-old Caucasian, right-handed adolescent with no previous was admitted to our department following a partial motor seizure epileptic seizure with secondary generalization. Neurological examination was normal. There was no family history of neurofibromatosis.

CT-scan and MRI of the brain revealed a bilobed bilobed expansive process 4 cm long in the right ventricular ventricular crossroads. The lesion was irregularly contoured, was surrounded by edema and captured contrast at its periphery periphery (Fig 1A-D).

Surgical resection was performed under neuronavigation through a parietal craniotomy. A corticotomy corticotomy, approximately 15 mm in length, was performed at the posterior temporal sulcus. Dissection of the white matter then allowed access to the ventricular carrefour, located 15 mm deeper. The tumour was well delimited, exclusively intraventricular and pedicled on the choroid plexus. It was grayish in color and papillary in appearance papillary appearance. Excision was macroscopically complete. No postoperative neurological deficits were observed. In no significant amputation of the visual field of the visual field. Magnetic resonance imaging (MRI) performed 14 months later showed no tumour recurrence tumour recurrence.

Fig 1 Preoperative imaging: contrast-enhanced CT scan showing a right heterogeneous intraventricular tumor (A). T1-weighted MRI with gadolinium injection in axial (B), coronal (C) and sagittal views (D).

Histological examination led to the diagnosis of schwannoma in view of the existence of spindle cells disposed in bundles (Fig 1A) and individually surrounded of a reticulin framework (Fig 1B). Immunohistochemistry confirmed this diagnosis by revealing the presence of glial fibrillary acidic protein (GFAP) (Fig 1C), S100 protein (Fig 1D), vimentin and neuron specific enolase (NSE).

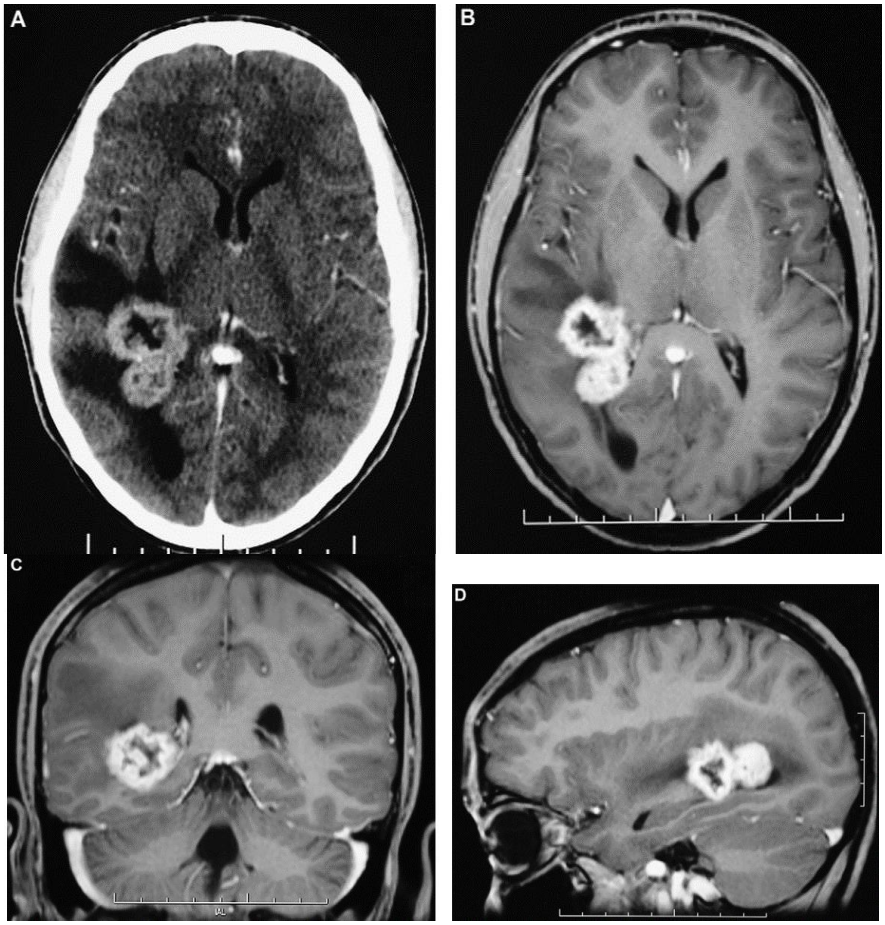

Fig 1: Preoperative imaging: CT-scan showing a heterogeneous tumour within the right ventricular carrefour, enhancing after injection of contrast medium (A). T1-weighted MRI with gadolinium injection clarifies the boundaries in axial (B), coronal (C) and sagittal (D) sections

DISCUSSION

Schwannomas developed in the cerebral parenchyma are rare. parenchyma are rare, with only around fifty cases described described (Huang *et al*., 1997). Intraventricular localization is exceptional, with eight cases reported to date in the literature (Barbosa *et al*., 2001; David *et al*., 1965; Dow *et al*., 2004; Erdogan *et al*., 2003; Jung *et al*., 1995; Ost and Meyer, 1990; Pimentel *et al*., 1988; Redekop *et al*., 1990). These cases are summarized in Table 1. No patient had neurofibromatosis. All were of masculin gender. Half of the tumors involved the lateral ventricles. Excision was complete in all cases. In seven patients, histology concluded in a benign schwannoma. In these cases no tumor recurrence was observed during follow-up ranging six months to eight years. No further treatment was necessary. One patient presented with a schwannoma schwannoma in the right lateral ventricle, metastases to the cerebellum and pontocerebellar angle. and pontocerebellar angle, responsible for his death (Jung *et al*., 1995). On review of the literature, no specific clinical or radiological sign or radiological signs to suspect the diagnosistic of intraventricular schwannoma (Di Biasi *et al*., 1994). The uptake of the contrast medium is variable, as is the extension of perilesional edema. In two patients patients showed intratumoral calcifications (Erdogan *et al*., 2003; Pimentel *et al*., 1988). The low specificity of imaging explains why diagnoses of ependymoma, papilloma, choroid plexus carcinoma, hemangioblastoma or meningioma are generally suspected in the first first hypothesis. Since Marcel David's first description, in 1965, of a schwannoid tumor of the lateral ventricle (David *et al*., 1965), the etiopathogenesis of this type of lesion has remained controversial. Since 1874, thanks to Benedikt's observations the existence of nerve fibers in the choroid plexuses (Benedikt, 1874). Later, the work of Stöhr and Pick confirmed the confirmed the involvement of the vegetative nervous system and Schwann cellules in choroidal innervation (Stöhr, 1922; Pick, 1970). The subsequent discovery of intraparenchymal and extraparenchymal intraparenchymal and extraventricular schwannomas, like those, described in the medullary region (El Malki *et al*., 2005), supported a second hypothesis already put forward by Riggs and Clary, according to which these tumours originate hyperplasia of the perivascular sympathetic nerve plexuses (Riggs and Clary, 1957). Another theory has also been advanced by Russel and Rubinstein, who observed the similarity of mesodermal pial cells with Schwann cells. Schwann cells (Russel and Rubinstein, 1989). They thus suggested that a conversion phenomenon could transform a cellule piale

into a Schwann cell. The latest hypothesis (Barbosa *et al*., 2001) evokes an ectopic migration of neural crest-derived cellules during embryogenesis. This theory establishes a link between neurocristopathies and intracerebral intracerebral schwannomas. In fact, three patients with intraparenchymal schwannomas presentant also a neurofibromatosis type 1 (Jung *et al*., 1995). The young age of the patients (20 years on average for intraventricular schwannomas and 22 years for intraparenchymal intraparenchymal tumors (Redekop *et al*., 1990)) would argue in in favor of this dyssembryological origin.

CONCLUSION

Intraventricular schwannomas are rare tumors, usually benign, and usually occur in young people. young subjects. Complete excision allows cure without recidive. There are no specific imaging findings for this exceptional diagnosis. diagnosis of this exceptional disease, whose etiopathogenesis remains controversial.

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