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Clinical case

Intraventricular schwannoma: Case report and review of literature

Schwannome intraventriculaire : a propos un cas et revue de la litterature

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ABSTRACT

We report here a case of intraventricular schwannoma. This location is rare. Our patient was a 68-year-old female with a large intraventricular lesion of the body of the lateral ventricle on the right side. Brain magnetic resonance imaging (MRI) revealed this lesion. After a right parietotemporal craniotomy, microsurgical excision using neuronavigation was performed to completely remove the tumor. Histological and immunohistochemical examination confirmed the diagnosis of intraventricular schwannoma devoid of atypical features. Postoperative MRI showed macroscopically complete tumor removal with no recurrence after 12 months of follow-up. A review of the literature identified 32 such cases published to date.

Mots clés :
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RÉSUMÉ

Nous rapportons un cas de schwannome intraventriculaire. Cette localisation est exceptionnelle. Une revue de la littérature retrouve 32 cas publiés à ce jour. Il s'agit d'une femme de 68 ans avec une volumineuse lésion intraventriculaire intéressant le carrefour ventriculaire droit. L'imagerie par résonance magnétique (IRM) cérébrale a révélé cette lésion. Une exérèse microchirurgicale sous neuronavigation après une craniotomie pariéto-temporale droite a permis une résection complète de la tumeur. L'examen histologique et immunohistochimique a confirmé le diagnostic de schwannome intraventriculaire dépourvu de caractère atypique. L'IRM de contrôle post-opératoire a montré une exérèse tumorale macroscopiquement complète et absence de récidive après 12 mois de suivi.

1. Introduction

Intracranial schwannomas represent 8% of intracranial tumors, 85% of cerebellopontine angle tumors and 29% of spinal nerve root tumors. Approximately 90% of cases are solitary and sporadic, while 4% arise in the context of neurofibromatosis type 2 (NF2) and 5% are multiple but unassociated with NF2 [1,2]. Intraventricular schwannomas are rare. A review of the literature was done using the search engines Pubmed, Google Scholar and ScienceDirect for articles published in English with the keywords "intraventricular schwannoma". To date, only 32 cases have been reported [3–33]. Intraventricular schwannomas are most often located in the lateral ventricles. We report the 33rd case of intraventricular schwannoma, which was macroscopically resected and had an excellent outcome.

2. Case report

The case involves a 68-year-old female with a history of high blood pressure, cholecystectomy and parathyroidectomy in 1996 in the context of chronic hypercalcemia with repeated renal colic. She consulted in our department in July 2016 due to a 3-month history of daily headaches, gradually increasing in intensity. Balance disorders associated with dizziness and walking instability appeared progressively. The patient also reported memory disorders and phosphenes.

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Physical examination revealed left motor and visual hemineglect, no motor deficit, but instability in walking. There was no speech impairment.

Preoperative MRI of the brain (Fig. 1) in T2-weigthed axial, axial FLAIR, T2 axial gradient echo, and T1-weighted sequences with gadolinium injection revealed a large intraventricular mass in the body of the lateral ventricle on the right side. It was polycyclic, $54 \times 35 \times 40$ mm in size, necrotic-cystic with small hypointense signals on T2 gradient echo, which may correspond either to hemorrhagic remodeling or calcifications. The presence of a fleshy portion at the periphery of the lesion, enhanced after gadolinium injection, corresponded to vasogenic edema of the right parietal-occipital-temporal cerebral parenchyma. This lesion caused dilation of the temporal and occipital horns of the right lateral ventricle. The right choroid plexus appeared crushed forward. This lesion was some distance from the interventricular septum.

Using neuronavigation, a macroscopically complete excision of this voluminous intraventricular lesion involving the body of the lateral ventricle was performed. The patient was placed in a supine position, with a block under the right shoulder, with her head turned to the left, held in a Mayfield clamp. After identification with the neuronavigation system, a right parietotemporal cranial flap was formed centered on this intraventricular lesion. A transparietal corticotomy was performed with bipolar coagulation around the body of the lateral ventricle to preserve the white matter tracts. Using an operating microscope, and after identification with neuronavigation system, this voluminous right intraventricular lesion was reached without difficulty. With the ultrasound dissector, the center of the tumor was removed. This lesion remained adherent to the ventricular walls and the choroid plexus in the right body of the lateral ventricle. We also found an intraventricular cleavage plane without difficulty. Adhesions to the ventricular walls were removed piece-by-piece with a microspatula and bipolar coagulation.

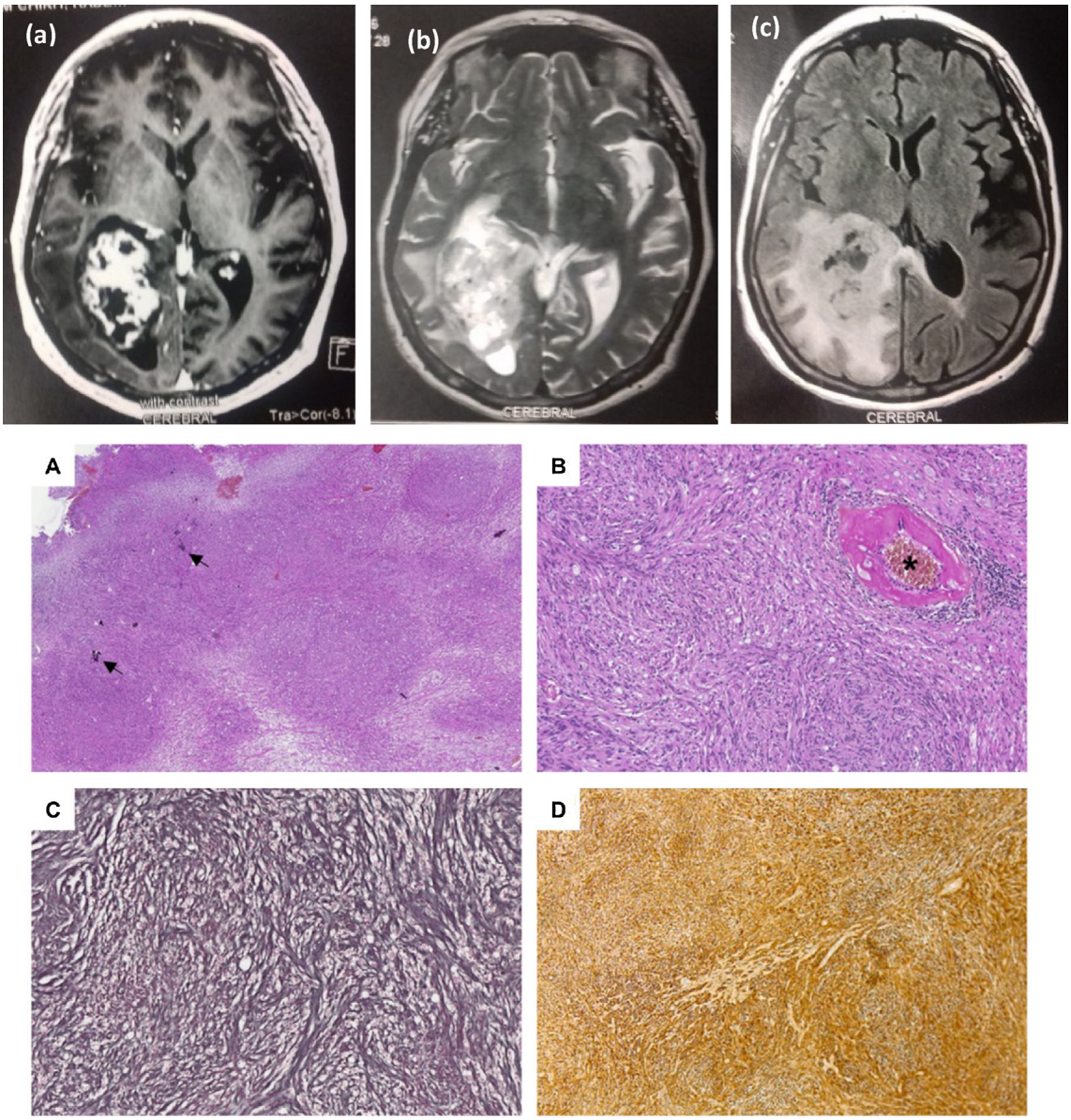

Fig. 1. Magnetic resonance imaging scans/histopathological findings. Preoperative MRI of the brain in axial T2 (b), axial FLAIR (c) and T1 with gadolinium (a) injection showed a mass measuring $54 \times 35 \times 40$ mm in the right lateral ventricle. A. Tumor with pluri-nodular architecture characterized by an association of small zones consisting of interwoven cell bundles separated by a looser tissue. Some calcifications are visible (arrows). (HPS, $\times$ 2.5). B. Cells are regular, rounded or fusiform with clear or eosinophilic cytoplasm. Thickened, hyalinized (asterisk) vessels are visible. (HPS, $\times$ 10). C. Staining with reticulin shows diffuse, single cell ($\times$ 10) expression. D. Diffuse and intense expression of the S100 protein with immunohistochemistry ($\times$ 10).

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