Schwannoma and meningioma association of cerebellopontine angle

Asociación de Schwannoma y meningiomas del ángulo pontocerebeloso

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Resumen

La asociación de tumores del ángulo pontocerebeloso es poco frecuente y se describe generalmente asociado con neurofibromatosis tipo II. La ocurrencia de schwannoma con meningioma en ausencia de NF2 es incluso menos común. Se presenta una mujer de 72 años que presenta pérdida progresiva de la audición en el oído izquierdo y mareos durante tres años. La resonancia magnética mostró dos lesiones del ángulo pontocerebeloso compatible con la característica radiológica de schwannoma y meningioma. Aunque es raro, el reconocimiento de este caso y su diferenciación es un importante predictor de buen pronóstico para el paciente.

Palabras clave: Tumores del ángulo pontocerebeloso, tumores de colisión, schwannomas, meningiomas.

Abstract

The cerebellopontine angle tumors association is rare and being usually described associated with neurofibromatosis type II. The occurrence of schwannoma with meningioma in the absence of NF2 is even less common. We report a 72-year-old woman presenting progressive hearing loss on the left ear and dizziness for three years. The magnetic resonance imaging showed two lesion on the cerebellopontine angle compatible with the radiological characteristic of schwannoma and meningioma. Although rare, the acknowledgement of this case and his differentiation is an important predictor of good prognostic for the patient.

Key words: Cerebellopontine angle tumors, collision tumors, schwannoma, meningioma.

Introduction

Cerebellopontine angle tumors correspond 8% of intracranial tumors, and acoustic schwannoma is the most frequent, corresponding to 80-90% of the region, followed by meningioma (5-10%) and epidermoid (5%)[1,2]. The two tumors association with different histopathological characteristics is called collision tumor and simultaneous occurrence of schwannoma with meningioma is rare, being described as associated with neurofibromatosis type II (NF2)[3]. The occurrence of these two lesions in the absence of NF2 is even less common[2]. This seems to be the eighth case of schwannoma in association with meningioma without NF2[1].

Case report

A 72-year-old woman presenting progressive hearing loss on the left ear and dizziness for three years. Furthermore, denies history of previous irradiation and shows no signs of NF2. On examination, the patient had left hypoacusis (audiometry confirmed 60% loss of hearing at the same side). The T1-weighted magnetic resonance imaging (MRI) showed two isointense lesions on the cerebellopontine angle, while T2-weighted MRI showed hyperintensity at the medial lesion (Figure 1). Administration of gado-

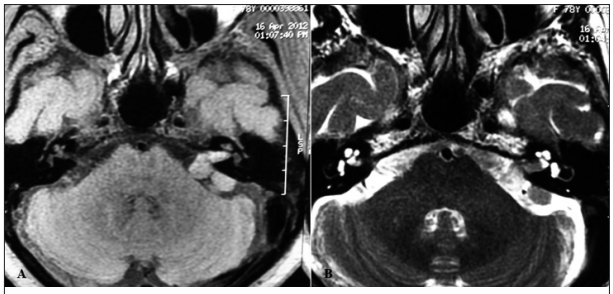

Figure 1. (A) Axial T1-weighted MRI showed two isointense lesions on left region of cerebellopontine angle, being the lateral of broad-based and medial with aspect of "ice cream cone" or "hairdryer". (B) T2-weighted axial MRI showing two lesions on left region of the cerebellopontine angle, being the lateral isointense and the medial hyperintense.

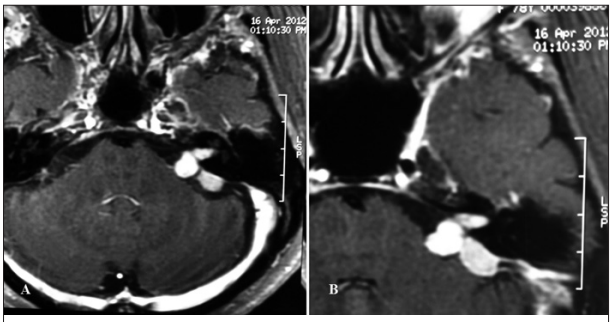

Figure 2. (A) MRI after contrast administration showing contrast uptake with greater intensity in the medial injury. (B) Magnification of (A).

Table 1.
Radiological findings that differentiate schwannomas and meningiomas of the cerebellopontine angle described by Shu et al[1]

	Meningioma	Schwannoma
Localization	Out of internal auditory canal	Centered on the internal auditory canal
Shape	Wide base	Usually rounded
Adjacent dural enhancement	Frequent	Rare
Hyperostosis	Occurs in 70% of cases	Rare

linium showed uptake in medial lesion (Figure 2).

Discussion

Several theories attempt to explain the simultaneous occurrence of these primary tumors in the absence of conditions such as radiotherapy or phakomatoses: (1) developing coincidentally; (2) local stimulus of meningeal tissue by first tumor inducing new injury on different tissue; (3) carcinogenic stimulus may develop tumors in different tissues simultaneously; or (4) residual embryological structures, serving as a basis for the development of multiple tumors. Genetic investigation is important, since genes responsible for the occurrence of these two tumors are located on chromosome 22[2-4].

Shu et al.,[1] highlighted the main radiological features that distinguish schwannomas and meningiomas of the cerebellopontine angle (Table 1).

MRI with gadolinium contrast is essential for accurate diagnosis preoperatively also serving as an important predictor, guiding treatment, monitoring and prognosis[5].

Schwannomas and meningiomas association of cerebellopontine angle with NF2 is well known, this histological combination has being reported about 25% of all schwannomas resected from patients diagnosed with this phakomatoses[4]. Besides NF2, previous irradiation can cause the simultaneous occurrence of different brain tumors [3].

Thus, the association of these tumors in the absence of NF2 is quite rare, being careful clinical and radiological evaluation important factors for successful treatment and prognosis.

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