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CASE STUDY

Meningioma of the internal auditory canal: A rare entity

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KEYWORDS
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Abstract
We present the case of a 61-year-old man in whom the magnetic resonance imaging performed prior to left cochlear implant surgery revealed a lesion in the right internal auditory canal resembling a vestibular Schwannoma. Left cochlear implant surgery was performed and three months later, the right internal auditory canal lesion was removed. The final histopathological analysis revealed it to be a meningioma.

PALABRAS CLAVE
Meningioma;
Conducto auditivo interno;
Ángulo pontocerebeloso;
Implante coclear

Meningioma del conducto auditivo interno: una rara entidad

Resumen
Presentamos el caso de un varón de 61 años que en la preparación para un implante coclear en el oído izquierdo se observa en la resonancia magnética una lesión en el conducto auditivo interno (CAI) derecho compatible con un schwannoma vestibular (SV). Se decide realizar implante coclear en el oído izquierdo y a los 3 meses se extirpa la tumoración del CAI derecho con el resultado anatomopatológico de meningioma.

Introduction

Meningiomas are tumours originating from the meningeal coverings of the arachnoid prolongations or from their ectopic situation. Between 5%10% of intracranial meningiomas settle in the cerebellopontine angle (CPA) and they represent the second most common tumour in this location after vestibular schwannoma (VS).

These meningiomas tend to be classified according to their location, which may be either in front of the internal auditory canal (IAC), focused on the IAC or behind the IAC.[1] The majority originate in the posterior surface of the petrosal and may affect the IAC during their growth. Primary IAC meningiomas are extremely rare.

Case study

Male, 61 years old, with left ear cophosis and profound sensorineural hearing loss in the right ear, secondary to

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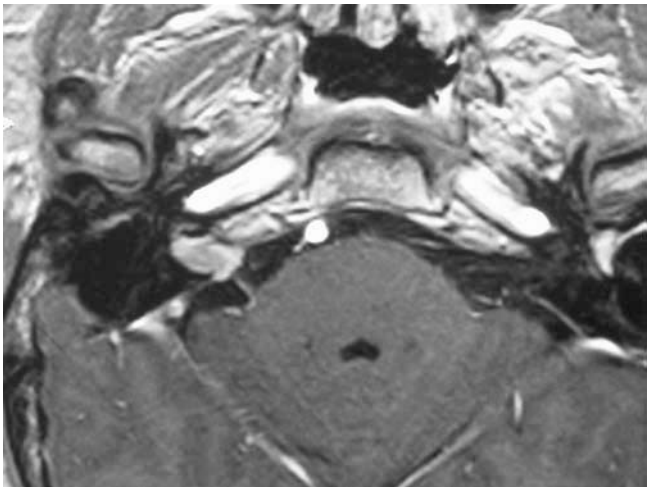

Figure 1 Tumour measuring 11x7 mm that completely occupies the right IAC with slight expansion to CPA.

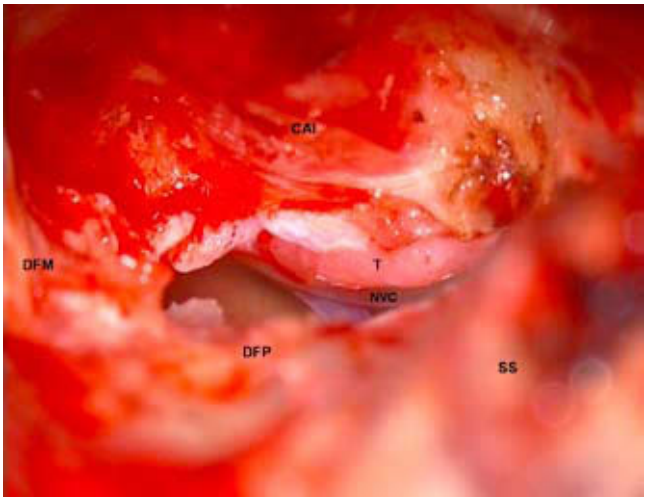

Figure 2 View of the translabyrinthine approach: the tumour completely occupies the right IAC with access to the CPA. DFM*: middle fossa dura mater (FDM); DFP*: posterior fossa dura mater (PDM); SS: sigmoid sinus; CAI*: internal auditory canal (IAC); T: tumour; NVC*: vestibulocochlear nerve (VCN). [*Spanish acronym].

bilateral chronic otitis media. For several years, he used a hearing aid in the right ear, with no intelligibility in speech audiometry at the present time.

The placement of a cochlear implant in the left ear was considered. We requested a computed tomography (CT) scan and magnetic resonance imaging (MRI) studies to assess cochlear patency. The MRI showed a tumour in the right IAC (Figure 1) compatible with VS (hypodense lesion in T1, isodense in T2 and with gadolinium uptake). A cochlear implant was placed in the left ear with good functional outcome (76%of disyllables, 100%of sentences, tone audiometry in open field 30 dB). At 3 months after the implant surgery, the tumour in the right IAC was removed through a translabyrinthine approach (Figure 2). The pathology corresponded to a standard form of meningioma with a type I epithelioid-meningothelial pattern.

Discussion

Primary meningiomas of the IAC are extremely rare. Only 5 studies were found in the literature in this respect in the past 5 years. Series are small, ranging between 1 and 13 patients.[2-6]

From the clinical point of view, they tend to be more insidious than VS. Those with a primary origin in the IAC generate hearing loss, tinnitus and vestibular symptoms similar to VS, and are almost indistinguishable from them.

Lesions are homogeneous on MRI, hypodense in T1 and isodense in T2, and are detected after gadolinium administration. The difference with respect to VS is that they often have a broader base of implantation, sometimes present internal calcifications and can generate hyperostosis in the surrounding bone. The presence of a "dural tail" (contrast uptake by the dura mater near the lesion) is suggestive of a meningioma, but not pathognomonic. When they originate primarily in the IAC, they behave radiologically like VS. There are not any differences in macroscopic anatomy between primary meningiomas of the IAC and VS.

The anatomopathological diagnosis often suffers great difficulties with haematoxylin-eosin techniques. There is also a wide variety of histological patterns that can reach up to 14 morphologies, according to the World Health Organization.[7] A comprehensive immunohistochemical study in which the epithelial membrane antigen (EMA) is the principal marker of these tumours is therefore required. Once the optical and immunohistochemical differential diagnosis has been carried out, there is a third aspect related to the benign/malignant characteristics of the lesion, that is, to the inclusion of cases in forms I (benign), II (atypical) and III (anaplastic).

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