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Case Report

Otitis Media with Effusion Revealing Underlying Meningioma

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Otitis media with effusion (OME) is a very common condition in the current clinical practice. Usually idiopathic, it may sometimes be the consequence of primary diseases. Extracranial meningioma is rare, and even more when involving the ear and temporal bone. We report a case of temporal meningioma spreading to the middle ear and mastoid presenting as an OME. The diagnosis relies on a thorough imaging evaluation with computed tomography and magnetic resonance imaging. This short report aims to warn the otolaryngologist of this rare situation to prevent any delay in diagnosing and managing such a condition.

KEYWORDS: Otitis media, effusion, meningioma, temporal bone

INTRODUCTION

Extracranial extension of meningioma is rare and most frequently involves the orbit or the nose and paranasal sinuses [1]. Spreading to the temporal bone is even more rare and can imitate otitis media with effusion (OME) with a high risk of misdiagnosis and/or delay to find out the correct diagnosis of intracranial meningioma [2, 3].

We present a case of chronic OME revealing underlying meningioma and based on a literature review, discuss the main aspects of diagnosis and management of this condition.

CASE PRESENTATION

A previously healthy 44-year-old woman visited our department for an OME persisting despite two courses of antibiotics, steroids, and decongestants. She complained of right aural fullness with hearing loss that started 12 months before. Otoscopy revealed a right middle ear effusion behind an intact tympanic membrane suggesting serous otitis media. Physical evaluation was otherwise normal, including the fiberoptic examination of the nasopharynx. Hearing test revealed a 30 dB right conductive hearing loss (CHL). A ventilating tube (VT) was placed in the right ear under local anesthesia. The postoperative course was marked by a purulent otorrhea resistant to conservative management, and the persistence of the 30 dB CHL.

Computed tomography (CT) was performed and a non-specific soft tissue mass filling the middle ear and mastoid cavities, associated with a hyperostosis of the temporal bone and a hairy aspect of the margins of this hyperostotic boney reaction, was seen on the right side (Figure 1). This radiologic triad is highly suggestive of an intracranial meningioma extending to the middle ear and mastoid; this was confirmed by additional magnetic resonance imaging (MRI) demonstrating a right temporal en plaque meningioma spreading to the adjacent sphenoid wing (Figure 2).

Based on this diagnosis, we removed the VT. The tympanic membrane spontaneously healed and the discharge stopped. A conservative management was decided. Amplification with hearing aid was offered to the patient who declined.

The patient gave us a verbal informed consent to report her case.

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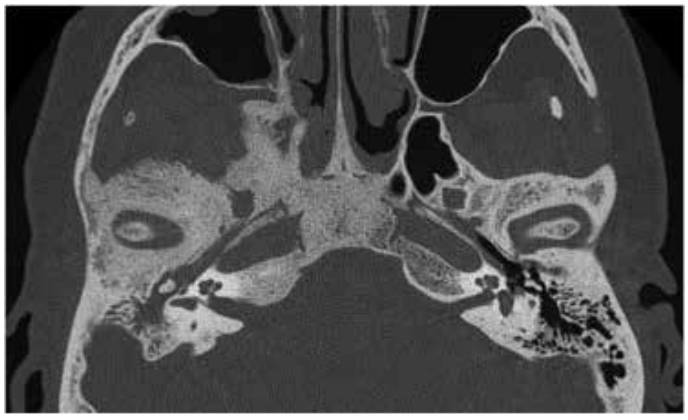

Figure 1. Axial computed tomography scan showing a non-specific soft tissue mass filling in the middle ear cleft and mastoid cavity associated with a hyperostosis of the temporal bone and greater wing of the sphenoid and a hairy aspect of the margins of this hyperostotic bony reaction

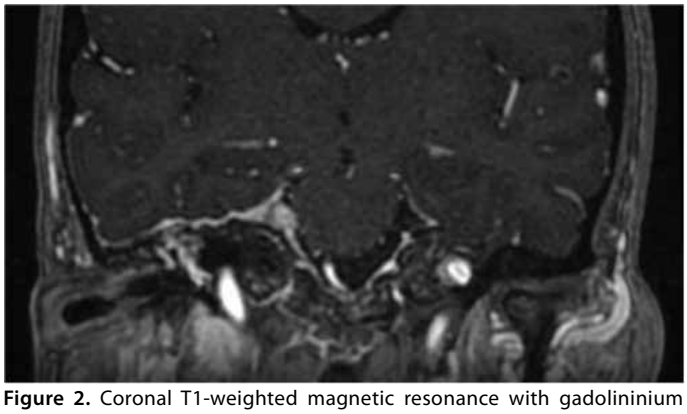

Figure 2. Coronal T1-weighted magnetic resonance with gadoliniinium administration demonstrating an en plaque meningioma with thickening and a strong enhancement of the temporal and sphenoid wing dura on the right side

DISCUSSION

Otitis media with effusion is a very common situation in daily otolaryngology practice. In adults, underlying causes, such as nasopharyngeal tumor, systemic disease, or skull base tumor, should be systematically ruled out [4].

This case aims to report the atypical otologic presentation of an en plaque temporal meningioma extending to the middle ear, mimicking an otitis media with effusion. The soft tissue mass filling the middle ear and mastoid bowl is made of meningioma and inflammatory fluid [5]. Hearing loss and aural fullness are the usual complaints of the patient but are not specific of the underlying condition. This explains why the diagnosis of meningioma is often delayed for months or years, as in our case with more than 1 year. Imaging is the key for the diagnosis [3, 6-10]. CT, being the first line imaging modality for exploring chronic otitis media, is often performed first [3-5, 11]. CT without injection typically shows an opacity of the tympanomastoid cavity associated with an hyperostosis of the temporal bone and a hairy aspect of the margins of the involved bone [11]. MRI shows the enhancement of the thickened dura demonstrating the meningioma extending to the middle ear and mastoid spaces.

In case of OME related to temporal meningioma, the insertion of a VT is frequently complicated by intractable otorrhea. If otorrhea occurs, we recommend to remove the tube and to wait for the spontaneous closure of the tympanic membrane. If the diagnosis of meningioma extending to the middle ear is known before beginning therapeutic management, we do not recommend inserting VT. Thus, aural fullness cannot be relieved, and hearing rehabilitation relies on amplification with conventional hearing aids. The role of surgery is usually limited to debulking the globular meningioma compressing the brainstem.

CONCLUSION

The very common OME may sometimes be related to underlying conditions such as skull base meningioma. The otolaryngologist should be aware of this situation and should not hesitate to performing complementary imaging evaluation in case of a unilateral OME that is prolonged or unresponsive to usual therapies.

Informed Consent: Verbal informed consent was obtained from the patient who participated in this study.

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