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Radiology

A Rare Cause of Conductive Hearing Loss, the Middle Ear Osteoma

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Abstract **Case Report**

Osteomas are benign and frequent bone tumors. Temporal bone osteomas are usually located to the external auditory canal, their location at the middle ear is rare. They are usually revealed by progressive hearing loss. We report the case of a 40-year-old woman who had a right ear conductive hearing loss. A CT-scan showed a bone-density tumor in the right antrum and posterior mesotympanum, hanging up to the tegmen tympani. The diagnosis of middle ear osteoma had been confirmed histologically after a surgical exploration. Middle ear osteomas are rare benign tumors, less than 36 cases was described from 1964. They always present with a hearing loss, and the diagnosis is made by CT-scan. The treatment is usually surgical for symptomatic patients.

Keywords: Osteoma, middle ear, imaging.

INTRODUCTION

Temporal bone osteomas are usually found in the external auditory canal, however, their presence in the middle ear is exceedingly rare. In the medical literature there is a report of 70 cases of temporal bone osteomas originating outside the external canal, [1] and about 36 cases of middle ear osteomas. [2].

CASE REPORTS

A 40-year-old-woman was admitted for evaluation of her bilateral hearing loss. She had a history of bilateral chronic otorrhea. Otoscopic examination revealed bilateral perforation of the tympanic membrane. The audiogram showed a conductive hearing loss more marked on the right side. A high resolution CT scan of the temporal bone was performed, showing a giant round bony mass located in the right meso-tympanum, extending to the antrum cavity and hanging up to the tegmen antri. Its density was about 1500 UH and 8 mm size. It was compatible with an osteoma. The ossicles appeared normal, the middle ear was also filled with a small amount of granulation tissue with sclerotic right mastoid cavities. Perforation of the tympanic membrane was identified (Fig. 1). A surgical management was performed given the symptomatic nature of the osteoma and its large volume. The bone mass was excised transmastoidally. The diagnosis was confirmed histologically.

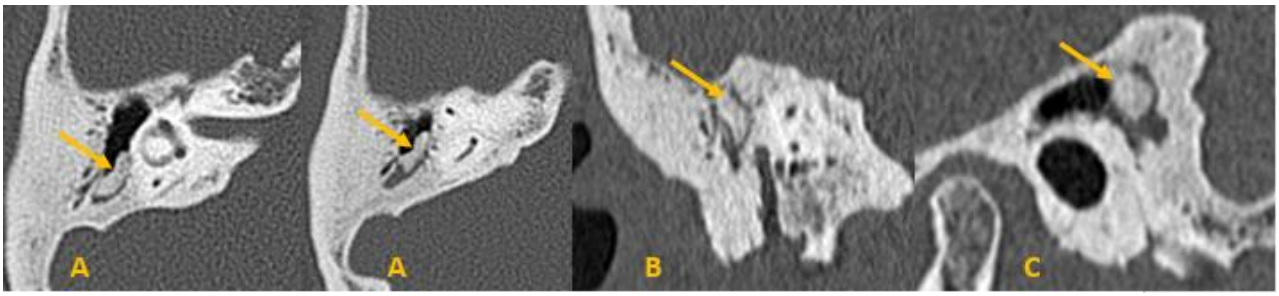

Fig-1: High resolution CT of the temporal bone in axial (A), coronal (B) and sagittal (C) sections, showing a rounded, bone density mass (arrow) occupying the meso tympanum and the antrum and hanging to the tegmen antri

DISCUSSION

Middle ear osteomas are extremely rare lesions. They occur mostly in young patients. Its etiology is still unknown. However, they are thought to develop from the connective tissue of the bone capsule. [1]. Trauma, infection, and heredity have all been implicated as inciting factors. [3]. In our case, tympanic membrane perforation and chronic otitis media with osteoma of the middle ear suggests the possible inflammatory origin. The first case was diagnosed in 1964 [3]. To date, about 36 cases have been reported in literatures. [2].

The histopathology is similar to other sites osteomas. They are made up of mature bone, with dense lamellae and organized Haversian canals. The intertrabecular stroma is usually cellular and contains osteoblasts, fibroblasts, and giant cells [3].

The most common symptom of middle ear osteomas is conductive hearing loss. Some authors have reported a few asymptomatic cases diagnosed incidentally [3].

The diagnosis is confirmed by CT scan. [4]. High-resolution-computed tomography (HRCT) scan of temporal bone is the diagnostic imaging modality. CT scan demonstrated a well circumscribed high density masse on the middle ear, it allows defining the extent of the middle ear osteoma, to assess the involvement of the ossicular chain, detect any secondary manifestation of the tumor and look for associated ear abnormalities. [3].

In this case, the CT scan revealed a well circumscribed, round bony mass in the meso-tympanim and the antrum cavity, there was also the combined chronic otitis media and mastoiditis. Middle ear osteomas are usually small and they remain stable in size [3]. In our case, the tumor size was large, reaching 8 mm.

Any bone growth from the middle ear should suggest osteoma. It constitutes a differential diagnosis of fenestral otosclerosis, ossifying hemangiomas, osteoid osteomas, benign osteoblastoma, ossifying fibroma, fibrous dysplasia, osteochondroma, chondroma, calcified meningioma, isolated eosinophilic granuloma, tumor with giant cells and malignant lesions such as osteosarcoma and osteoblastic metastases [4].

Excision is recommended only for symptomatic lesions in patients with significant conductive hearing loss or when there are other complications associated. [3]. Small asymptomatic lesions are managed conservatively with periodic follow up [4].

CONCLUSION

Middle ear osteomas are rare tumors [4], often incidentally detected during radiological evaluation [5]. They should be considered in the differential diagnosis of any middle ear bony masses. The most frequent symptom presentation is a conductive or mixed hearing loss [5]. High resolution CT scan is the diagnostic imaging modality; it is very helpful for the surgical planning. Small asymptomatic lesions are managed conservatively with routine follow up while surgery is reserved for symptomatic cases [4].

REFERENCES

1. Toro, P. C., Castillo, À. C., Martínez, R. M., & Juan, I. D. (2014). Middle ear promontory osteoma. *American journal of otolaryngology*, *35*(5), 626-627.
2. Zhang, Q. J., Zhang, W. J., Zhang, J. J., Ning, F., Liu, J., & Han, W. J. (2021). Analysis of clinical characteristics of middle ear osteoma at different locations. *Zhonghua er bi yan hou tou Jing wai ke za zhi= Chinese Journal of Otorhinolaryngology Head and Neck Surgery*, *56*(3), 273-279.
3. Ryu, J. H. (2005). Osteoma of the middle ear: case report. *Journal of the Korean Radiological Society*, *52*(3), 161-164.
4. Hamid, O., Abdelhamid, A. O., & Taha, T. (2018). Middle ear osteoma: case report and review of literature. *J Otolaryngol ENT Res*, *1*(3), 325-326.
5. Falcioni, M., Bertoli, G., & Ciavarro, G. (2020). An uncommon cause of conductive hearing loss. *American Journal of Otolaryngology*, *41*(6), 102717.