

## A Rare Case Report: Meniere Disease with Bilateral Internal Acoustic Canal Osteomas

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Received: 10 Nov 2024

Accepted: 15 Dec 2024

Published: 20 Dec 2024

J Short Name: ACMCR

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### Citation:

Fahad Al-Lhedan, A Rare Case Report: Meniere Disease with Bilateral Internal Acoustic Canal Osteomas. *Ann Clin Med Case Rep*®. 2024; V14(11): 1-2

### 1. Abstract

Internal acoustic canal osteomas are uncommon noncancerous bony growth and they have no aggressive behavior. Patient's complaints secondary to these lesions are variable but usually related to balance problems and hearing issues [1]. Management should be tailored based on patient's symptomatology [2-4]. This is a case of a patient who is known to have Meniere disease along with bilateral internal acoustic canal osteomas, as depicted on cross-sectional images, presenting with history of hearing loss, tinnitus and vertigo.

### 2. Introduction

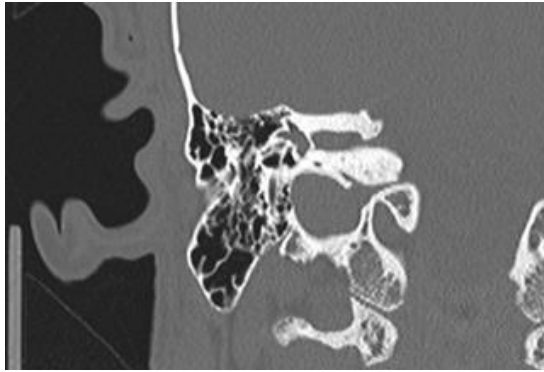
Skull base osteomas are rare osseous tumors but fortunately, they are benign and slowly growing masses [5,6]. CT scan is the gold standard imaging modality for diagnosing these lesions and MRI

may play a role in confirming this possibility. Several differential considerations should be entertained prior to decision making. Medical treatment might be beneficial and surgical intervention can be offered whenever the former solution is not effective.

### 3. Case Presentation

This is a 50-year-old gentleman who is known to have Meniere disease complaining of progressive hearing loss, ringing in ears and recurrent disabling attacks of vertigo with subsequent falling down and traumatic injuries that are affecting his life quality. Otoscope examination displays normal tympanic membranes. Temporal bones CT scan shows left vestibular aqueduct obliteration in addition to bilateral left larger than right internal acoustic canal osteomas. The patient was uncooperative and no further investigations were done. He was treated conservatively with anti-vertiginous therapy.





Coronal temporal bones CT scan images: Large left (upper image) and small right (lower image) internal auditory canal bony growth.

#### 4. Discussion

Osteomas have unique imaging findings manifested by that they are usually solitary and pedunculated bony growths on CT scan and the presence of bone marrow is a diagnostic MR imaging feature. Under a microscope, these tumors are round to oval in shape consisting of compact bone that projects from the subperiosteal or endosteal surfaces of the cortex and they have a mature and well-differentiated bone tissue with a predominantly laminar structure traversed with Haversian canals and the latter is pathognomonic for osteoma [5,6].

Internal acoustic canal osteomas are not occurring very often and the probable differential diagnoses are exostosis, Paget's disease, fibrous dysplasia, otosclerosis, congenital abnormalities, meningioma, schwannoma, hemangioma, lipoma and cholesteatoma [7]. The most frequent locations for osteomas are the external auditory canal, mastoid cortex and facial bones [8]. Patients with osteoma might be asymptomatic and the lesions are discovered incidentally or they may be suffering from aural fullness, tinnitus, vertigo or hearing loss [8,9]. Treatment of this bony abnormality remains controversial and serial imaging is advised whenever osteomas are silent. However, a trial with symptom-targeted medication should be given at the beginning and surgery could be considered only if there is no improvement. Of note that surgical resection is not always curative and results in milder symptoms therefore this must be explained to the patient [10].

#### 5. Conclusion

In brief, osteoma is an unusual entity that is described scarcely in the literature. Consequently, the etiology, natural history and management of it is still debatable. CT scan has superior diagnostic performance with excellent accuracy in detecting osteomas. Therapeutic options are largely based on severity of symptoms. Follow up is advised for individuals with no clinical manifestations and conservative management in addition to surgical intervention are reserved for symptomatic patients.

#### 6. Conflicts of Interest

The authors declare that there are no conflicts of interest regarding publication of this paper.

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