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Case Report

External auditory canal osteoma: a case report

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ABSTRACT

External auditory canal (EAC) osteomas are rare, solitary benign unilateral lesion. Small lesions are incidentally diagnosed and larger lesions produce symptoms of pain, ear discharge and defective hearing. Diagnosis is made based on a combination of clinical history and examination, radiographic imaging, and histopathology. They are usually confused with exostosis which are multiple, bilateral, smooth-bordered, broad-based lesions without deep extension. We present a case of 21-year-old male patient who came to our outpatient department, with complaints of left ear blocking sensation for past 6 months. On evaluation, it was diagnosed as left EAC osteoma and the same was excised via post-auricular approach. This case is being presented for its rarity.

Keywords: Osteoma, EAC, Exostosis

INTRODUCTION

Osteoma in the EAC manifests as a rare benign tumour, which is solitary, unilateral and slow growing pedunculated mass in the bony canal.[1] It shows a predilection for the EAC, mastoid cortex, facial bones and mandible.[2] Its incidence is 0.05% of total otologic surgery.[3] Chronic irritation/inflammation to the inner part of the EAC leads to ingrowth of the bone through suture lines. Osteoma of ear canal are usually incidental finding and they are unilateral and solitary. They show clinical presentations such as hearing loss, otorrhea, otalgia, otitis externa and cholesteatoma. Diagnosis is made based on a combination of clinical history and examination, radiographic imaging, and histopathology. Differential diagnosis includes exostosis, adenoma, hard cerumen, foreign body, xanthogranuloma and other benign fibro-osseous lesions.

CASE REPORT

A 21-year-old male patient came to our out-patient department with complaints of left aural fullness for 6 months, which was insidious in onset, progressive, with no aggravating or relieving factors. It was associated with decreased hearing. History of habitual use of ear buds present. No history of swimming, trauma, ear discharge or ear pain. On otoendoscopic examination, a bilobed mass that was completely obscuring the ear canal was noted, which was hard in consistency and non-tender (Figure 1). Tympanic membrane in the left side could not be visualized, right side was normal.

HRCT of temporal bone showed a pedunculated bony osteoma arising from the anterior wall of left EAC measuring 6.5×4×9 mm, with underlying cerumen (Figure 2 and 3). Pure tone audiometry showed moderate conductive hearing loss (46 db HL) in the left side.

Patient underwent excision of left EAC osteoma through a post auricular approach under general anesthesia (Figure 4). Osteoma was removed through its peduncle and raw area was covered with skin flap (Figure 5). The specimen was sent for histopathological evaluation. Post operative period was uneventful.

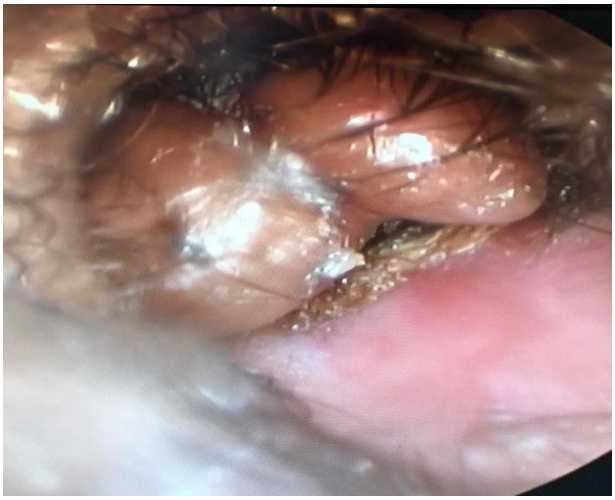

Figure 1: Otoendoscopic image of left external auditory canal bilobed osteoma.

Figure 2: HRCT temporal bone coronal view.

Figure 3: Axial view of pedunculated osteoma arising from anterior wall of left EAC.

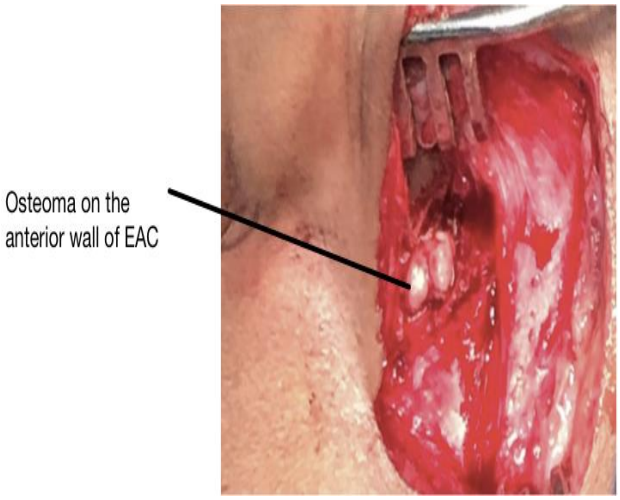

Figure 4: Left EAC osteoma via post auricular approach.

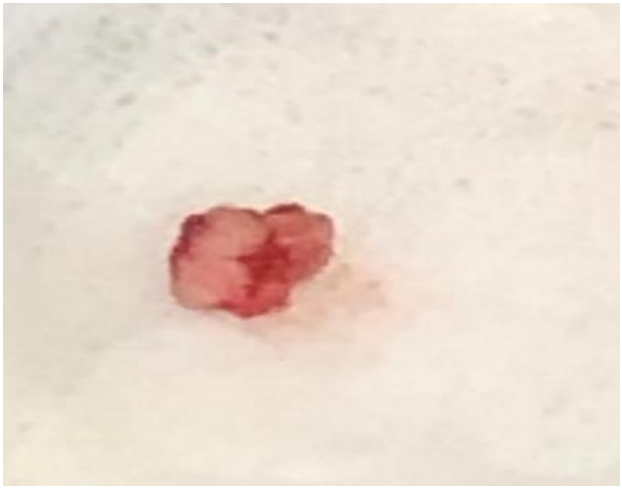

Figure 5: Excised left ear canal osteoma.

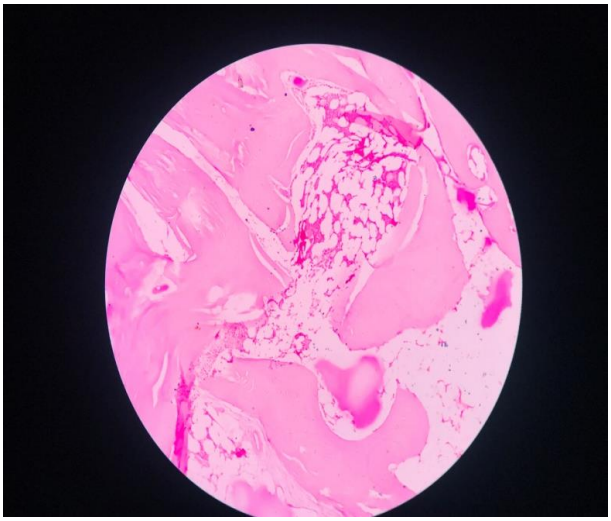

Figure 6: Histopathological slide of the excised specimen-lamellated bone and bone marrow with few fibrovascular channels, suggestive of osteoma.

Histopathological examination reports confirmed the specimen to have features suggestive of osteoma with areas of lamellated bone, bone marrow and few fibrovascular channels (Figure 6).

DISCUSSION

The solitary osteoma is an uncommon unilateral lesion, attached to the tympansquamous or tympanmastoid suture line, almost always in the outer half of the ear canal. It is seen commonly in the second decade of life and can be seen in a wide range of age groups.[3] Osteomas of temporal bone are rare, and have been reported in the middle ear, internal auditory canal, squamous temporal bone, mastoid, internal auditory canal, cerebellopontine angle and in the EAC.[4] Most common suggested eitiology of osteoma are trauma, chronic infection, and hormonal dysfunction.[5-7] Graham showed that the most common site of origin of EAC osteomas is from the vascular pre-osseous connective tissue in the tympan squamous or tympan mastoid suture lines.[1] Kim et al reported osteoma mostly originated in the tympanic wall, and this is regardless of the tympano-squamous or tympano-mastoid suture line.[8]

The most common clinical entity that shares a very similar picture with osteoma in terms of presentation is exostosis. The differentiation between these two are still a dilemma. Exostosis are multiple, bilateral, appear as wide based and smooth lesions of the EAC and are usually considered to be a reactive condition secondary to multiple cold-water immersions or recurrent otitis externa.[9,10]

There are limited histopathological studies done for osteoma and exostosis as these lesions are drilled during surgical removal. Exostosis are concentric, dense layers of subperiosteal bone with abundant osteocytes, lacking fibrovascular channels covered with periosteum and squamous epithelium.[1] Studies by Fenton et al suggested that fibrovascular pathway is a characteristic feature of osteoma, and could also be found in exostosis also and so it could not be differentiated histopathologically.[2] In some cases they might also occur together.[11] Osteoma and exostosis has been categorized as a single clinical group, by some researchers, whereas, Schuknechts classifies the lesions limited to the EAC as exostoses and lesions that extend beyond the canal as osteoma.[12,13]

The management of osteoma of EAC depends on the size, symptoms and site of origin. Regular aural toileting can be done for small, asymptomatic lesions. Excision of the osteoma must be actively considered as the treatment of choice in symptomatic patients with large lesions. The location of the osteoma in relation to the isthmus of the EAC is the main deciding factor for surgery. A post-auricular approach is used for medially placed osteoma and a trans-canal approach for laterally placed neoplasm.[14] The approaches used are post aural, endaural and trans-meatal. Though the most preferred route was post aural due to better exposure and complete removal, nowadays with the advent of endoscopes and better equipment, minimally invasive trans-meatal route is now being preferred for EAC osteoma and exostosis removal.[3] The osteoma is usually excised through its pedicle and the base is drilled to decrease the incidence of recurrences.[5] Grinblat et al performed drill canaloplasty in 245 cases of EAC osteomas and exostosis and reported no recurrence in their cases.[15] Some of complications encountered during the removal of EAC osteoma are as follows: EAC posterior wall injury, tempero-mandibular joint injury, ear drum and ossicular injury, peripheral paralysis of facial nerve and chorda tympani damage, sensorineural hearing loss and narrowing of canal lumen.

Piezoelectric device is a new innovation in the field of osteoma surgery. It is a bony scalpel that uses micro vibrations at ultrasonic frequency so that soft tissues will not be damaged even on accidental contact with the cutting tip. With an experienced otologist the piezoelectric device is considered suitable for bone surgery and for removal osteomas of the EAC.[16]

Literature shows that there is increased risk of development of EAC cholesteatoma secondary to long-standing EAC obstruction and chronic inflammation, further leading to bony canal erosion and complications such as sigmoid sinus thrombosis and neck abscesses.[17-19]

CONCLUSION

Thus, any symptomatic EAC osteoma is removed surgically, the approach is determined by the size, location and experience of the surgeon. Though by literature asymptomatic lesions are usually managed conservatively, based on the multiple cases reported, we can conclude that EAC osteomas, which were initially asymptomatic, if neglected could lead to complications which are life-threatening. Hence once identified these EAC lesions should be removed electively to give better prognosis.

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