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A Case of Spontaneous External Auditory Canal Cholesteatoma

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Abstract: ***External auditory canal cholesteatoma (EACC) is a disease that is characterized by desquamating tissue and bone erosion. EACC is a disease with a postoperative or post-traumatic etiology, secondary to stenosis of the external auditory canal or, very rarely idiopathic (spontaneous or primary). Clinically, Primary external auditory canal cholesteatoma presents with nonspecific symptoms but many patients can be silent or even asymptomatic. We are presenting a case of spontaneous EACC extending in attic and mastoid treated surgically by canal wall down mastoidectomy with meatoplasty.***

Keywords: Cholesteatoma, External Auditory Canal, Spontaneous, EACC

1. Introduction

The external auditory canal cholesteatoma (EACC) is an uncommon disease that affects 1 per 1000 new patients with otologic complaints [1]. It is characterized by the erosion of the external auditory canal (EAC) bone portion by proliferation of the adjacent squamous tissue It can be iatrogenic, post-traumatic or, more rarely, spontaneous. Clinically, patient may present with otorrhea with chronic dull pain but many patients can be silent/asymptomatic.[2,3] Hence, EACC may be a dangerous entity with a serious destruction but few or no symptoms. Here presenting a case of spontaneous EACC extending in to attic and mastoid treated surgically by canal wall down mastoidectomy with meatoplasty.

2. Case Report

A 26-year-old woman presented with a history of intermittent left ear pain, ear fullness of 2 month duration. No history of previous ear disease, significant trauma, or surgery was present Physical examination - otoscopy – revealed firm painful mass in the left External Auditory Canal (EAC) which prevented tympanic membrane visualization. Pure tone audiometry showed mild conductive deafness. A computed tomography (CT) scan of the temporal bone revealed a soft tissue mass in the left external auditory canal extending in to attic with ossicles pushed medially (Fig. 1). Erosion of the posterior, inferior wall of the EAC was noted. The antrum of the left mastoid other air cells appeared normal (Fig. 2). The middle ear cavity reduced on left. With a differential diagnosis of keratosis obturans/EACC patient was taken up surgery under general anesthesia. With Post aural approach EAC opened first keratosis seen then cholesteatoma sac was identified in the EAC. When we followed sac it was pushing tympanic membrane medially (Fig. 3), Extending into attic through eroded posterior wall. Complete sac was removed, canal wall reduced. Mild erosion of vertical part of facial canal noted. The ossicular chain was intact, mastoid air cells were normal (Fig. 4). Temporalis fascia graft used to cover raw area and meatoplasty done. Post-operative period was event free and the cavity healed well. Patient was discharged on 7th day of surgery. Patient has been on regular follow-up for 1 month with well healed cavity and free from presenting symptoms (Fig. 5).

3. Discussion

The first description of the EACC was made by TOYNBEE in 1850, but the precise definition of this disease was obtained by PIEPERGERDES et al., in 1980, when the differentiation between EACC and keratosis obturans was made. [4,5]. Cholesteatoma confined to the EAC is extremely uncommon and its pathogenesis remains unclear.

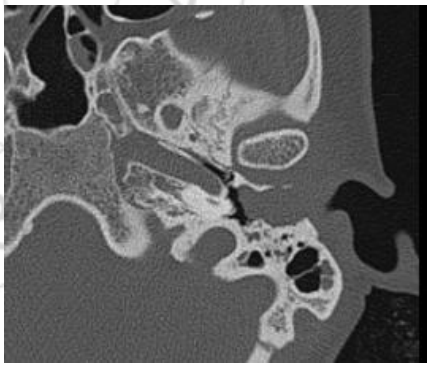

Figure 1: Axial temporal bone CT image – soft tissue mass filling the EA Cwith anterior and posterior wall erosion.

EACC have been categorized into several types, including the rare primary or idiopathic type as well as secondary types related to EAC stenosis, chronic inflammation, trauma, post-surgical, and post-radiation causes.[2,6,13] There are many reported series describing secondary cases of EACC but only a few reports of primary unilateral cholesteatomas.[3,6,13]

Our patient was a primary case, as there was no history of previous ear disease, significant trauma, or surgery. Suggested risk factors for the development of primary EACC include disruption of the local microcirculation by

microtrauma from use of cotton swabs, smoking, or diabetes mellitus.[7,13]

Clinically, patients with EACC usually presents with symptoms like chronic dull pain and otorrhea, but many patients can be silent or even asymptomatic.[2,3] Hearing loss is uncommon unless the cholesteatoma invades the middle ear or attic.

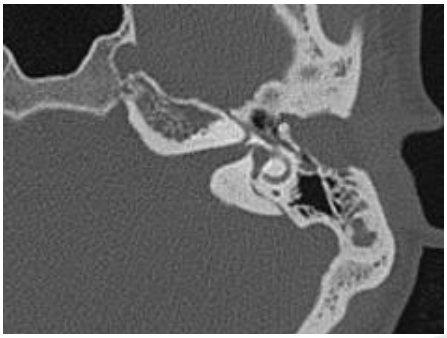

Figure 2: Axial temporal bone CT image- the soft-tissue mass filling the inferior EAC, medially pushed ossicles.

The diagnosis is based on history and physical examination. Computed tomography (CT) imaging gives the extent of disease. EACC is most commonly seen as an EAC soft tissue mass with associated bone erosion and intramural bone fragments on HRCT temporal bone examination.[8] The EACC may extend into the mastoid and middle ear, or it may involve the facial nerve canal or tegmen tympani and later on presenting as complications. There are only a few reports describing cases of EACC with extensive invasion into the mastoid cavity.[1,2,6,9,10,11]

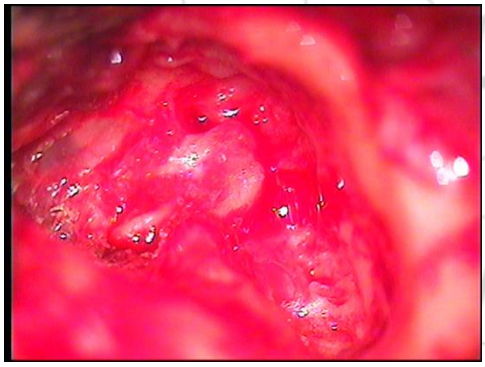

Figure 3: Intra op-tympanic membrane pushed medially eroded poster part of EAC with granulation/cholesteatoma.

The management of EACC is debatable in terms of surgery versus conservative treatment. The management depends on the site and the extent of bone destruction. Naim classified EACC into four stages on the basis of histopathology and clinical symptoms: stage I, hyperplasia of the canal epithelium; stage II, periosteitis; stage III, defective bony canal; and stage IV, erosion of the adjacent anatomic structure. He recommended the following approaches for surgical removal of EACCs: for stage I, a transcanal approach; for stages II and III, an endaural approach with local anesthesia; and for stage IV, a postauricular incision followed by a canal wall down technique [12].

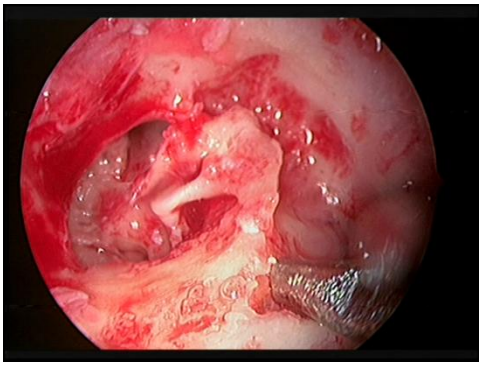

Figure 4: Final cavity with intact osscicles, healthy middle ear cavity.

Our case falls on stage IV, we performed canal wall down mastoidectomy and wide meatoplasty; thus, we could achieve good control of the cavity during the postoperative period. We were able to preserve the tympanic cavity and its structures; therefore, patient's hearing acuity is preserved.

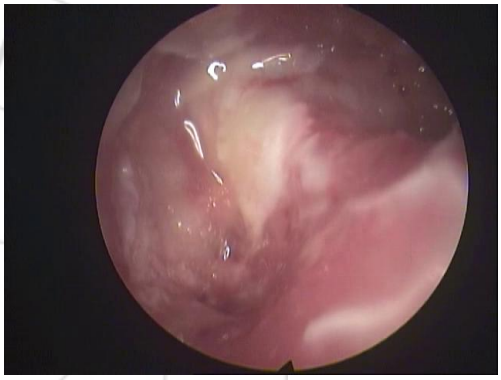

Figure 5: Healthy cavity during Post‐operative period

4. Conclusion

The EACC is an uncommon affection that is part of the differential diagnosis of chronic otalgia and otorrhea. The treatment is especially surgical and the follow up is clinical and exceptional. The evaluation of the lesion and surgical planning must be done after performance of CT of temporal bones.

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