

Case report

Cholesteatoma of external auditory canal: a case report



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Abstract

Cholesteatoma is a common occurrence in the middle ear. Cholesteatoma of the external auditory canal (EAC) is a rare entity. We report the first case of our department of cholesteatoma of the EAC limited to the posterior wall, in a 14-year-old patient presented with chronic left purulent otorrhea. We performed a canalplasty under general anesthesia. Debris of keratin were removed and the eroded bone was curetted. We repaired the bony erosion with the tragal cartilage. Two years after the surgical procedure, there was no evidence of recurrence. Clinical symptoms of EAC cholesteatoma are not specific. It is therefore important to think about cholesteatoma when a patient presents with chronic otorrhea with intact tympanic membrane.

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Introduction

Cholesteatoma is more frequent in the middle ear. Cholesteatoma of the external auditory canal (EAC) is a rare occurrence [1]. According to the literature, its incidence varies from 1 to 7.1 cases per 1000 new otologic patients [2,3]. It can be classified as primary (or spontaneous) and secondary [3-5]. According to the literature, primary cholesteatoma is observed in adult patients [3]. Patients may present with otorrhea, otalgia, feeling of ear fullness, hearing loss, or without any complaint [3,4]. Diagnosis is based on clinical examination, and computed tomography (CT) scan is used to assess the extension of the cholesteatoma and to guide surgery procedure [6]. Treatment may be conservative or surgical, according to the extension of the cholesteatoma and the request of the patients [4,5]. We report a case of cholesteatoma of the EAC limited to the posterior wall, in a 14-year-old patient presented with chronic left purulent otorrhea and we discuss the possible causes, diagnosis and treatment.

Patient and observation

A 14-year-old female presented to our department with a history of left purulent otorrhea of three months duration, associated with an ear fullness at the same side. She had past history of intermittent purulent otorrhea from the same ear. There was no history of ear trauma or surgery procedure. The otoscopic examination revealed purulent otorrhea and epidermal debris in the left EAC. After debris removal, there was an erosion of the posterior bony portion and the tympanic membrane was intact. Otoscopic examination of the right ear was normal. There was no facial palsy. Pure tone audiometry was normal. We made the diagnosis of cholesteatoma of the EAC and we requested a CT scan of temporal bones. CT scan showed a soft-tissue mass with erosion of the posterior wall of

the left EAC. The lateral wall of epitympanum, ossicles and the middle ear were intact (Figure 1). A canalplasty was performed under general anesthesia, through a postero-superior auricular approach. Peroperative observation revealed erosion of the posterior wall of the left EAC, not extending as far as the sulcus tympanicus (Figure 2). Tympanic membrane was intact. Debris of keratin were removed and the eroded bone was curetted. Tragal cartilage was used to repair bony erosions. The postoperative period was uneventful. Two years after the surgical procedure, there was no evidence of recurrence. The clinical examination of the EAC was normal.

Discussion

A cholesteatoma is a cystic structure lined by keratinizing stratified squamous epithelium with high destruction and erosion potential of neighboring structures [6]. Cholesteatoma is more frequent in the middle ear. Cholesteatoma of the external auditory canal is a rare occurrence [1]. According to the literature, its incidence varies from 1 to 7.1 cases per 1000 new otologic patients [2,3]. This case is the first in our department. External auditory canal cholesteatoma can be classified as: primary (or spontaneous) of unknown cause. There are several theories to explain its pathogenesis. The two main suggested that: firstly, the EAC cholesteatoma is due to an underlying osteitis causing by minor trauma of the skin of the canal. The proliferation of this affected bone by squamous epithelium may lead to cholesteatoma. Secondly, related to age, there would be a decrease of the epithelial migration and a production of a drier wax, which are adherent to the ear canal skin, trapping desquamated epithelial cells [3-5]; secondary: the EAC cholesteatoma can be postoperative, posttraumatic, postinflammatory, postirradiatory, postsyphilitic [1,3,5]. No etiologic factor was identified in our patient. However, we suggest that there was an underlying osteitis of the tympanic bone, due to ear canal recurrent infection, that explain past

history of intermittent otorrhea of our patient. Our patient is a teenager. According to the literature, primary cholesteatoma is observed in adult patients (mean age 57 years (range 33 to 82) [3]. Clinical symptoms are not specific. The most common are otalgia and otorrhea, but many patients can be asymptomatic. Other symptoms include hearing loss, itching ear, feeling of having ear canal occluded and feeling of ear fullness [1,3,4].

The tympanic membrane is intact or subnormal. These symptoms are similar to those of bacterial otitis externa making the diagnosis difficult especially for the inexperienced practitioner. Symptoms are usually unilateral. Our patient presented in our office with unilateral chronic otorrhea and ear fullness. Generally, the EAC cholesteatoma arises in the floor of the auditory canal. The extension of the erosion can be anteriorly to the temporomandibular joint, inferiorly to the hypotympanum and the jugular dome and posteriorly into the mastoid and up to the facial nerve [1,6]. CT of the temporal bones is the gold standard to assess the severity and the extent of the disease [1,6,7]. CT imaging shows a soft-tissue mass with adjacent bone erosion. Small bone fragments may be found within that mass [6]. In our case report, bone erosion was limited to the inferior and posterior walls of the EAC. Treatment may be conservative or surgical [3-6]. The conservative treatment consists of removing keratin debris and cholesteatoma matrix, and curettage of the necrotic bone, under local anesthesia. It is performed when lesions are small, when there are contraindications of surgery or when the patient does not accept surgery [4,6]. However, when there is chronic pain, when the cholesteatoma extends locally (into the mastoid, middle ear, facial nerve...) or in case of failure of conservative treatment or significant hearing loss, surgical procedure under general anesthesia is performed (canalplasty, mastoidectomy, tympanoplasty, grafting defects with fascia/cement/cartilage) [4-7]. Concerning our patient, the lesion was limited to the tympanal bone. However, we decided a surgical approach, because in our context, follow-up of

patients is difficult. Many patients missed their medical appointments. Conservative treatment requires regular follow-up, which is difficult to implement in our context. Long-term follow-up is needed for patients to identify any possible recurrence [4].

Conclusion

Cholesteatoma of the external auditory canal is a rare entity in the literature. This case is the first in our department. Clinical symptoms are not specific and are similar to those of bacterial otitis externa making the diagnosis difficult especially for the inexperienced practitioner. Cholesteatoma should be kept in mind as a differential diagnosis in case of suspicion of otitis externa. It is a dangerous otitis because of potential risk of extension and destruction of neighboring structures. The diagnosis is clinical and CT scan allows to assess the severity of the disease. Removal of keratin debris and cholesteatoma matrix and curettage of the necrotic bone are the basis of the treatment.

Competing interests

The authors declare no competing interests.

Authors' contributions

All the authors were involved in patient care; contributed to manuscript writing and have read and agreed to the final manuscript.

Figures

Figure 1: axial petrous temporal bone CT image showing a cholesteatoma of the EAC as a soft-tissue mass with erosion of the posterior wall of the EAC

Figure 2: peroperative view showing an excavation in the posterior wall of the EAC

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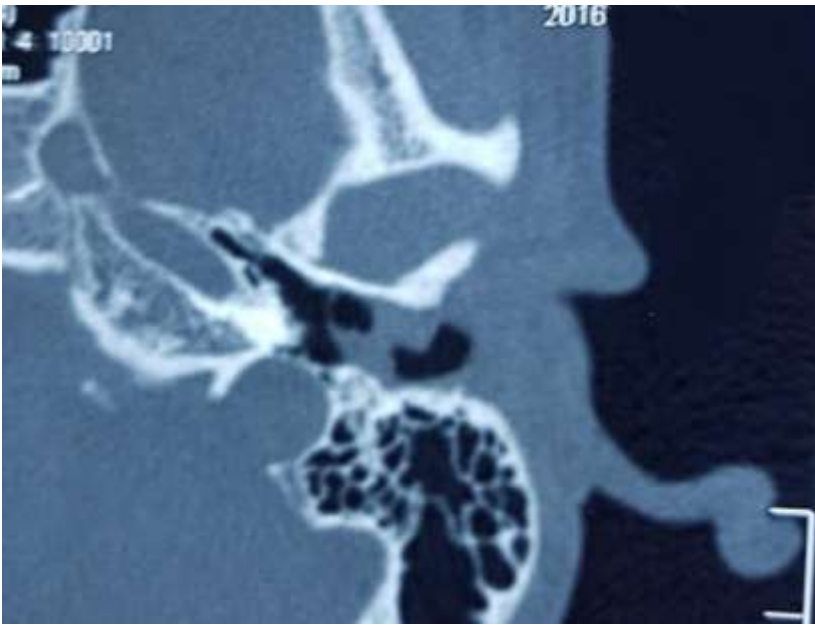


Figure 1: axial petrous temporal bone CT image showing a cholesteatoma of the EAC as a soft-tissue mass with erosion of the posterior wall of the EAC



Figure 2: peroperative view showing an excavation in the posterior wall of the EAC