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Pathology

Cholesteatoma of the External Auditory Canal a Rare Pathology: Case Report

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Abstract **Case Report**

Introduction: Cholesteatoma of the external auditory canal (ECA) is a rare nosological entity, it is characterized by the invasion of squamous tissue in an area of the external auditory canal (EAC), generally in the posteroinferior region, which is accompanied by bone erosion [1]. ***Clinical case:*** 30-year-old female patient with no known pathological history who presented with a 7-day history of clinical symptoms characterized by left ear otalgia associated with foul-smelling otorrhea and temperature rises at the beginning of the condition, receiving antibiotic treatment with amoxicillin (for 7 days). Without improvement, later it is associated with intense headache at the occipital level, nausea, vomiting and dizziness. ***Discussion:*** The percentage of men and women is similar in adulthood. The most frequent location is posteroinferior and in most cases the origin is primary. Otalgia and otorrhea were the main symptoms. In general, treatment is conservative, but a surgical approach was necessary in a third of patients through analoplasty or mastoidectomy, depending on the extent of the lesions [2]. ***Conclusion***: Although we do not know the pathogenic mechanisms responsible for the formation and development of CCAE, the inclusion of keratin between the epithelium and the bone, with the participation of the periosteum, seem to be the triggers of the process. The diagnosis is clinical and its extent determines the use of local or surgical treatment, which is usually resolving [4].

Keywords: Cholesteatoma, external auditory canal, keratosis.

INTRODUCTION

Cholesteatoma of the external auditory canal (CCAE) is a rare nosological entity, whose incidence is estimated between 0.3 to 0.9 cases/year/100,000 inhabitants, 60 times lower than middle ear cholesteatoma [1-3]. It is characterized by the invasion of squamous tissue in an area of the external auditory canal (EAC), generally in the posteroinferior region, which is accompanied by bone erosion. According to the literature, it was initially described by Toynbee in 1850, who only mentioned the presence of epidermal scales in the ear canal.

It is important to distinguish it from another entity, ketorosis obturans (KO), secondary to the accumulation of desquamated keratin inside the EAC, which grows without piercing the epithelial layer or the bone [4].

In its expansion, it presses the walls of the canal, widening it circumferentially, even leaving the eardrum in relief [5]. When the EAC (obturans) is completely occluded, it is manifested by hearing loss and the examination shows an epidermal plug, which is difficult to extract [5]. The first to differentiate these two entities was Piepergerdes *et al*., in 1980 [8]. which also characterized them clinically; KO due to otalgia and moderate hearing loss, usually bilateral, while CCAE due to otalgia and/or otorrhea, without noticeable hearing loss, being mostly unilateral and appearing at older ages.

Since there are no pathognomonic symptoms or signs in EAC, the differential diagnosis should also be

considered with EAC carcinoma, malignant otitis externa, or a complication of Langerhans cell histiocytosis of the temporal bone [6].

When diagnosed with cholesteatoma of the external auditory canal, studies recommend action; when the extension and symptoms are scarce, treatment can be conservative with local cures with debridement of the sequestered keratin and the application of topical antibiotic and anti-inflammatory drops to improve the infection [7].

CLINICAL CASE

We present the case of a 30-year-old female patient with no known pathological history who presented with a 7-day history of clinical symptoms characterized by left ear otalgia associated with foul-smelling otorrhea and temperature rises at the beginning of the condition, receiving antibiotic treatment with amoxicillin for 7 days without improvement, later associated with intense headache at the occipital level, nausea, vomiting and dizziness for which he consulted. On physical examination, Right Ear, patent external auditory canal, intact tympanic membrane, ventilated middle ear, Left Ear, swollen external auditory canal with foul greenish otorrhea and keratotic lesions on the floor, roof and walls.

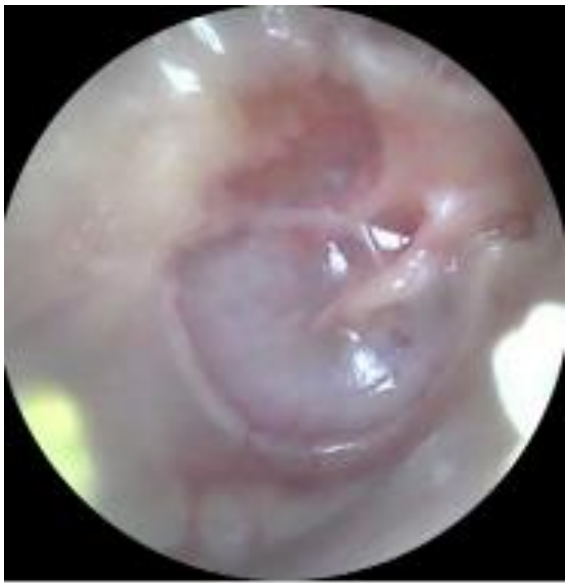

Figure 1: Right Ear

Figure 1 Otomicroscopy of the right ear, patent external auditory canal, tympanic membrane, integrated ventilated middle ear.

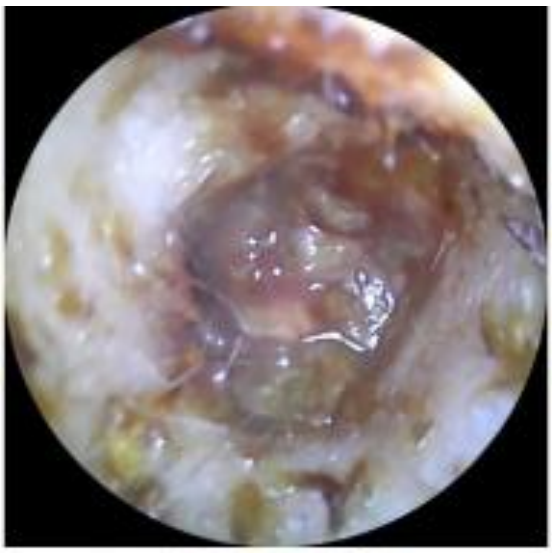

Figure 2: Left Ear

Figure 2 Otomicroscopy of the left ear, swollen external auditory canal with foul greenish otorrhea and keratotic lesions on the floor, ceiling and walls. Which does not allow assessing the tympanic membrane.

In paraclinics, leukocytes 10,300, Hb 14.1 g/ dl, hematocrit 42%, platelets 326,000, blood glucose 97 mg/ DL, Proteinemia 7.7, CRP 12.86, kidney function within normal parameters.

Complementary exams. Lumbar puncture: yellow color, hemorrhagic, cloudy appearance, yellow post-centrifugation color, clear appearance, fibrin clot absent, glucose 102 mg/dl, protein 9.88 g/l LDH 173IU/l, lactic acid 1.7, leukocyte count › 1000 cells / mm3, red blood cells covered field.

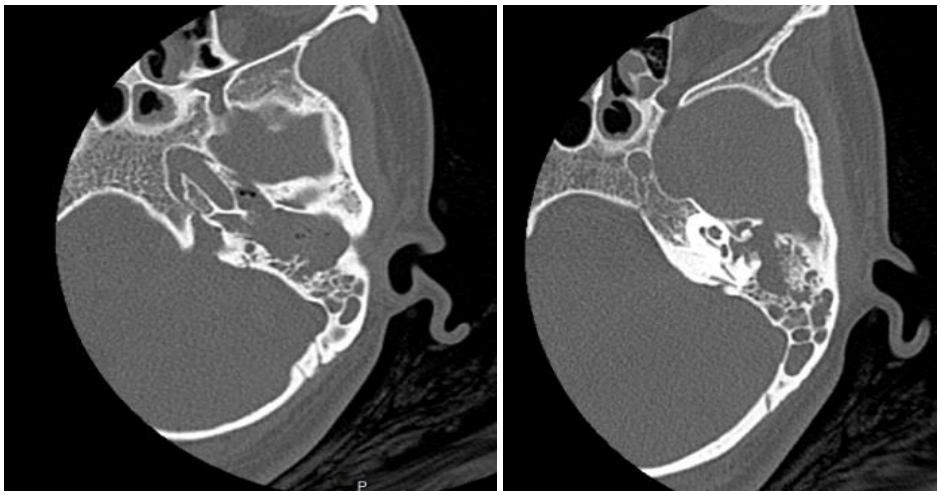

Figure 3: Petrous Axial Computed Tomography without contrast

Figure 3 Computed axial tomography without contrast of the left petrous bone: Axial section of the left ear, erosion of the floor of the external auditory canal is evident, partial occupation due to density of soft tissues in the mastoid cells, erosion of the tegmen tympani, occupation due to density of soft tissues in the canal. external auditory canal and Middle Ear that communicates with the middle cerebral fossa.

When diagnosed with cholesteatoma of the external auditory canal, studies recommend action. When the extent and symptoms are limited, treatment may be conservative. As is the case of the patient who underwent local cures with debridement of the keratin sequestered in the floor, ceiling and walls of the external auditory canal, complementing clinical treatment with the application of topical antibiotic and anti-inflammatory drops to improve the infection.

RESULTS

Patient after debridement of the sequestered keratin in the external auditory canal of the left ear and the application of antibiotic and anti-inflammatory ear drops.

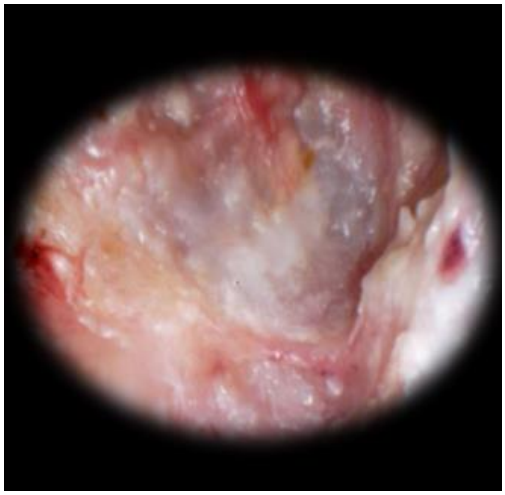

Figure 4: Otomicroscopy external auditory canal left ear

Figure 4 Otomicroscopy: Left ear, external auditory canal after debridement of keratotic lesions

The patient recovered the patency of the external auditory canal with improvement in symptoms, and was followed up in the outpatient clinic.

DISCUSSION

Regarding the primary or idiopathic form of CCAE, the literature does not express a predominant age and while some studies describe a higher incidence in older ages, others also refer to it in pediatric age [4].

Regarding gender, there is also no agreement in the literature. Although the majority believe that it is more common in men [5]. In the present clinical case, in terms of gender, it is a 30-year-old female, the opposite of what is described according to the literature.

Etiopathogenesis: Knowing the causes and pathophysiological mechanisms that lead to CCAE constitutes the main topic of discussion, not yet clarified, in this pathology [3]. Epithelial migration is a physiological process that is only observed in the EAC, because its glove-finger morphology makes it necessary for a continuous transfer of the epidermis from the eardrum to the outside, to avoid the accumulation of peeling and detritus in its Internally, it seems that CCAE could originate primarily, without a triggering cause, or secondary to different processes [2]. Epithelial retention that causes EAC stenosis, congenital or acquired, would be a favoring factor, but as in the majority of patients presented, EAC can also arise spontaneously or idiopathically and although several theories have been proposed to explain its genesis, none has been able to be corroborated, in the case of the patient the presentation of her pathology is idiopathic [3].

Clinical features: there are no characteristic clinical symptoms or signs and the most useful finding to confirm CCAE is the presence of focal osteonecrosis or bone sequestrations without epithelial coating and the most frequent symptom reported in the literature in patients with CCAE is otalgia and otorrhea, otalgia is caused by initial periostitis or secondary to the invasion of squamous tissue in the bone canal and can manifest as dull discomfort or pain, which can sometimes be intense [8] coinciding with the present clinical case.

The diagnosis of CCAE is mainly based on clinical history and microscopic examination of the ear [7]. The radiological study helps us to know the extent of the lesions and to delimit their proximity to the middle ear and neurovascular structures [8] allowing us to plan surgical access, above all we will use Computed Tomography which better demonstrates the extent of bone erosion [9].

Treatment: The therapeutic approach depends on the spread, location and aggressiveness of the cholesteatoma and the characteristics of the patient himself [9]. In the case of the patient, local cures were performed with debridement of the sequestered keratin and the application of topical antibiotic and anti-inflammatory drops to improve the infection.

CONCLUSION

Although we do not know the onset and pathogenic mechanisms responsible for the formation and development of cholesteatoma of the external auditory canal, the inclusion of keratin between the epithelium and the bone, with the participation of the periosteum, seem to be the fundamental triggers. The frequency of this process would probably be greater if we took it into account in daily practice. It shows a variable evolution, more or less silent, but the diagnosis is clinical. Its extension determines whether we apply local or surgical treatment to resolve the pathology.

Conflicts of Interest: The authors declare that there is no conflict of interest regarding the publication of this paper.

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