



Chronic Otitis Media with Evolution to Mastoiditis and Extensive Scalp Abscess: Case Report

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Abstract

Introduction: Chronic Otitis Media is an infection in the middle ear that is caused by bacteria or viruses. It can develop from an acute ear infection, but can also develop from factors such as allergies, recurrent ear infections, or other underlying health problems. Symptoms of chronic otitis media usually include ringing in the ears, dizziness, earache, hearing problems, and can cause permanent hearing damage. Luckily, there are effective treatments available to treat chronic otitis media. These include medication, supportive therapy, and in some cases, surgery. **Materials and Methods:** The case of a young patient with chronic otitis media and evolution to mastoiditis is presented. **Case Report:** Patient, 18 years old, admitted with a picture of purulent otorrhea associated with fever for 15 days. He had a history of intermittent purulent otorrhea since his 15 years of age. It evolved with signs and symptoms suggestive of extension of the infectious process to bone and neurological structures. Multiple antimicrobial regimens, abscess drainage, and later right mastoidectomy were performed. He evolved well in the postoperative period and after hospital discharge. **Results:** Chronic Otitis Media (COM) has a high prevalence in groups with social vulnerability and low access to health services. Antibiotic therapy has helped reduce complications, but there is still a poor prognosis when they occur. It is essential that the doctor be aware of the signs of middle ear infection and start treatment immediately to prevent chronicity and complications of the disease. **Conclusion:** We described a case of otomastoiditis with a voluminous abscess in the temporal bone occurring in the city of Manaus, state of Amazonas.

Keywords: Chronic Otitis Media; Mastoiditis; Extensive Abscess

Abbreviations: CSOM: Chronic Suppurative Otitis Media; TM: Tympanic Membrane

Introduction

According to the World Health Organization, Chronic Suppurative Otitis Media (CSOM) is defined as an inflammatory process

of the middle ear mucosa affecting from the tympanic membrane to cavities adjacent to the auditory tube that lasts more than 3

months and is accompanied by secretion behind an intact tympanic membrane or otorrhea associated with Tympanic Membrane (TM) perforation [1]. The suppuration can be persistent or intermittent. Depending on the suppuration, chronic otitis media can be classified as suppurative and non-suppurative [2]. Middle ear infection is one of the main reasons for high clinical consultation, antibiotic consumption and surgical treatment in the Department of Otorhinolaryngology-Head and Neck Surgery [3]. The World Health Organization reports 709 million cases, with an average prevalence of 10.8 per 100,000 population, with around 68-78 million or 4-6% diagnosed with chronic suppurative otitis media [4]. The management of chronic suppurative otitis media is performed by providing ear drops as first-line therapy and other drugs depending on the patient's clinical condition. Surgery is performed to eradicate infections that do not respond well to medication and to improve the auditory conduction system [5]. Recently, increasing evidence has shown that chronic suppurative otitis media is associated with various inner ear sequelae, including hearing loss, tinnitus, and vestibular impairment [6]. Chronic otitis media is associated with a high prevalence (40%-60%) of symptoms, as well as worse balance control and abnormalities in vestibular tests [7]. Histopathological studies also showed a significant loss of vestibular ciliated cells in temporal bones with chronic suppurative otitis media [2]. Assessing function in patients with chronic otitis media with suppuration is a challenge. First, the prevalence of chronic otitis media with suppuration is higher in the elderly, who may have multiple comorbidities that increase the risk of presenting vestibular symptoms [8]. Furthermore, the results of various vestibular function tests may be negatively influenced by the presence of conductive hearing loss or may not directly evaluate vestibular function in isolation [9].

Case Presentation

A male 18 year-old teenager was admitted to the João Lúcio Pereira Machado Hospital and Emergency Room on March 08, 2022 with a purulent otitis externa in the left auditory conduit associated with fever, asthenia, weight loss, and anemia for about 15 days.

He evolved with extensive inflammatory lesion with a floating zone extending from the left retroauricular region and parieto-occipital associated with periorbital edema and left ptosis, claiming a history of intermittent mucopurulent otitis not treated since his 15 years of age. He was in regular general condition, eupneic, dehydrated, febrile, presenting cutaneous pallor, hypotension of 96/49 mmHg and tachycardia of 160 bpm, but referring to otalgia and intense headache. He was hospitalized for 3 days at the Presidente Figueiredo Hospital, with the use of the ceftriaxone medication, and the clinical picture persisted. After a hypothesis of chronic otitis media with the presence of mastoiditis and extensive scalp abscess was raised, a CT (Figure 1) was performed on 08/03/2022 showing an inflammatory otomastoidopathy and the presence of hypodense collections that corresponded to a voluminous abscess that extended from the posterior cervical region to the bilateral parieto-occipital region, accentuated on the left. The first leukogram, performed in the municipality of origin, was within the normal range with an alteration of the erythrocyte demonstrating hemoglobin of 10.2 and hematocrit of 29.6 g/dL. In a new hemogram performed on 08/03/2022, it showed a leukocytosis level of 13,300 mm³ with 80% segmented, hemoglobin of 9.2 g/dL and hematocrit value of 26.7 g/dL. From the hemogram performed, showing a hemoglobin content of 8.0 g/dL and hematocrit of 24.9 g/dL and a PCR of 180 mg/dL, broad-spectrum antibiotic therapy (ceftriaxone and clindamycin) was initiated, associated with venous hydration, transfusion of hemoconcentrate (02 units) and symptomatic treatments, with submission of local anesthetic to drain the scalp abscess with an approximate output of 300 mL of pus-like secretion of yellowish-greenish color and fetid odor. Using a Penrose drain (Figure 2) due to the extension of the necrotic area, it was observed that, shortly after drainage, a partial reversal of the palpebral ptosis occurred, where we concluded that the cause of it occurred due to compression of the facial nerve by the large volume of secretion at the mastoid level. The patient evolved with clinical improvement from antibiotic therapy. He was discharged improved after physiological erythrocyte patterns were reestablished.

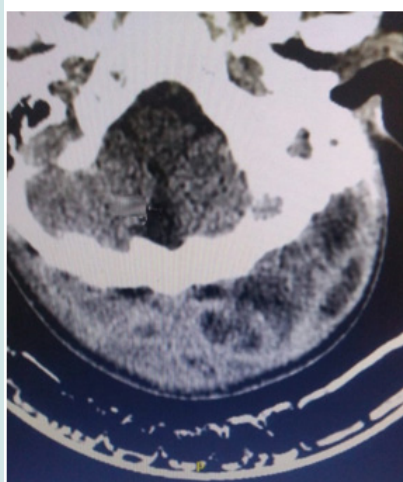


Figure 1: CT scan of skull showing inflammatory otomastoidopathy and presence of hypodense collections.

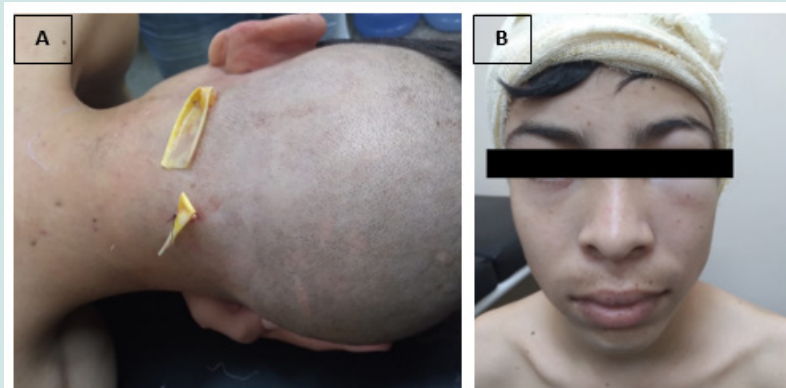


Figure 2: In A: Demonstration of Penrose Drain; and B: Periorbital Edema.

Discussion

Poor hygiene habits and living conditions associated with difficulty accessing health services are factors that favor the worsening of the infectious process in these patients. The patient in question had a history of outbreaks of mucopurulent otorrhea approximately three years ago [10]. Early identification of Otitis Media complications is essential for successful treatment. Proper diagnosis and treatment of Acute and Chronic Otitis Media have been shown to significantly reduce the risk of local, regional and distant complications [11]. A good anamnesis and physical examination, associated with adequate complementary tests, are of great importance in the diagnosis of intracranial and extracranial complications of chronic otitis media, thus allowing early intervention with improved prognosis for the patient. According to a study conducted in 2016, adults between the ages of 40 and 60 have a greater risk of developing OCMS compared to other age groups [12]. This trend can be attributed to the increase of comorbidities, such as diabetes mellitus, which are more frequent in this age group. In addition, sedentary lifestyle and inadequate food habits also contribute to the increase of CSOM in this age range [13]. A recurrent or persistent otorrhea for 2 to 6 weeks through a perforation in the tympanic membrane [14]. The second most common symptom of OMCS is hearing loss. Studies conducted in Australia have found that approximately 60% of patients with OMCS experienced some form of hearing loss. This is due to the reduced sound pressure difference between the outer ear and the middle ear caused by perforation of the tympanic membrane. Hearing loss can range from a mild to a profound hearing loss [15].

Retrospective studies in Thailand showed that facial nerve palsy is the second most reported complication, with an incidence of 0.24% at 8 years. This complication was reported as 27.9% in the same study [16]. Research from 2012 also supported these findings, indicating that the incidence of facial nerve palsy can decrease to 0.16–5.1% when antibiotics are administered [17]. It is important to recognize the signs and symptoms of Acute and Chronic Otitis Media so that they can be treated quickly and effectively. Common

symptoms include earache, hearing loss, dizziness, nausea, vomiting, and fever. Early diagnosis and proper treatment help prevent serious complications. Broad-spectrum antibiotic treatment for a minimum period of 5 days to 2 weeks can eradicate uncomplicated OCMS. However, it may take longer for the ears to dry out, so follow-up of at least 1 month after treatment is recommended to assess the possibility of recurrence [17]. It is worth noting that the long period of evolution, coupled with the lack of adequate medical treatment, led to the complications arising from the dissemination of the infectious process to extracranial structures in our case. Results from a 2017 study in India showed that 100% of patients treated with OCMS achieved dry ears for two years without the need for reoperation or retraction/piercing [17]. These results indicate that OCMS provides an excellent overall success rate for the treatment of dry ears. Surgical and medical management given according to the appropriate diagnosis will result in a good management. Studies suggest that complete healing usually occurs between 3 months after surgery, being possible to evaluate the condition of the OCMS between 1 and 6 months after the procedure [18].

Conclusion

In summary, OCMS is a condition that should not be neglected, as it can lead to serious complications and in some cases even be fatal. Early diagnosis and appropriate antibiotic therapy are essential for successful treatment of this disease. Thus, it is important that patients seek medical help as soon as symptoms arise so they can receive the appropriate treatment and minimize the risk of serious complications.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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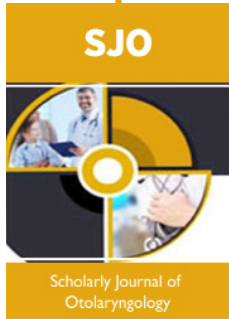
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