

Tubercular Mastoiditis Masquerading as Squamosal Chronic Suppurative Otitis Media

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Received: July 22, 2020

Published: August 31, 2020

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Abstract

Tubercular mastoiditis is a rare clinical entity and may be indistinguishable from squamosal chronic suppurative otitis media. Diagnosis of this condition is important because the treatment for tubercular mastoiditis is medical whereas treatment of unsafe chronic suppurative otitis media is surgical. We present a case of tuberculous mastoiditis in a 21 years-old-male who presented with history of right ear discharge for last one year. There was pain and swelling in right postauricular region for ten days. This was not responding to even culture sensitivity guided antibiotic therapy. Cortical mastoidectomy with tympanoplasty was done. Biopsy of the granulation tissues was positive for Acid Fast bacilli in Ziehl-Neelsen staining. Patient received course of anti-tubercular therapy and showed complete improvement. Tubercular mastoiditis is an important differential diagnosis in case of chronic otitis media which is not responding to antibiotic therapy. Early diagnosis of this clinical entity can avoid unnecessary surgery.

Keywords: Tubercular Mastoiditis; Chronic Suppurative Otitis Media

Abbreviations

Hz: Hertz; TM: Tubercular Mastoiditis; CSOM: Chronic Suppurative Otitis Media; HPE: Histopathological Examination; ATT: Anti Tubercular Therapy

Introduction

Tuberculosis is a chronic necrotizing granulomatous inflammatory disease caused by Mycobacterium tuberculosis. Tuberculosis is a serious health issue faced by developing countries. Most common site of primary tuberculosis is lungs. Extrapulmonary sites for tuberculosis includes cervical lymph node, bones, kidney, menin-

ges along with rare occurrence in nose, ear, larynx and parotid [1]. Incidence of tuberculous mastoiditis is found to be 0.5 - 0.9% of chronic otitis media [2]. Due to rare occurrence and variable clinical features, it is often difficult to diagnose tubercular mastoiditis. Here we are reporting a 21 years-old-male who has presented to us with chronically discharging ear with mastoiditis, and later proved to be tubercular mastoiditis on histopathology.

Case Report

A 21 years-old-male presented to our outpatient department with complaints of right post auricular swelling and pain for last 10

days. There was past history of intermittent foul smelling discharge from right ear and decreased hearing for last 1 year. There was no history of fever, cough, loss of appetite, vertigo, tinnitus or any other systemic features. On examination, there was fluctuant, tender erythematous swelling in the right postauricular region (Figure 1). External auditory canal did reveal any buldge. Otoscopic examination revealed a large central perforation in the right tympanic membrane with granular margins and with partially destructed ossicles (Figure 2). Nasal and throat examination was absolutely normal. Tuning fork test showed negative Rinne's test with 256 Hz and 512 Hz in right ear and Weber's test was lateralized to right ear, which was in coherence with pure tone audiogram depicting moderate conductive hearing loss (Figure 3). In view of impending complications related to squamosal CSOM, High Resolution Computed Tomography (HRCT) of temporal bone was done, which showed fluid and soft tissue density in right middle ear cavity and mastoid air cells. There was destruction of mastoid cell septations and middle ear ossicles (Figure 4). This patient was a follow up patient of our outpatient department for last 6 months where he was subjected to multiple courses of culture sensitivity guided antibiotics. However, there was no relief inspite of regular ear suction cleaning and antibiotics. In view of poor response to antibiotics, surgical exploration was planned. Cortical mastoidectomy with tympanoplasty was done. There were granulations present in the mastoid air cells, antrum, aditus, epitympanum. Histopathological examination (HPE) showed caseating epithelioid cell granulomas with giant cells and positivity for Acid fast Bacilli on Ziehl-Neelsen staining. Patient was started on Anti Tubercular Treatment (ATT), following which there was dramatic improvement in the symptoms. Patient is under regular follow-up and his ear is dry after sixteen months of surgery and anti-tubercular therapy.

Discussion

Tuberculosis can be either pulmonary or extrapulmonary tuberculosis. Among extrapulmonary tuberculosis, most common is the cervical tubercular lymphadenitis [3]. Tubercular mastoiditis is very rare, accounting for only less than 0.9% of all chronic suppurative otitis media (CSOM) [4]. Tubercular mastoiditis is usually seen in children and young adults [5]. It usually occurs secondary to active pulmonary disease. There are different routes of spread of tubercular infection to ear. It can be either via hematogenous spread or through eustachian tube or through pre-existing tympanic membrane perforations [3]. The classic clinical features in-



Figure 1: Postauricular swelling.

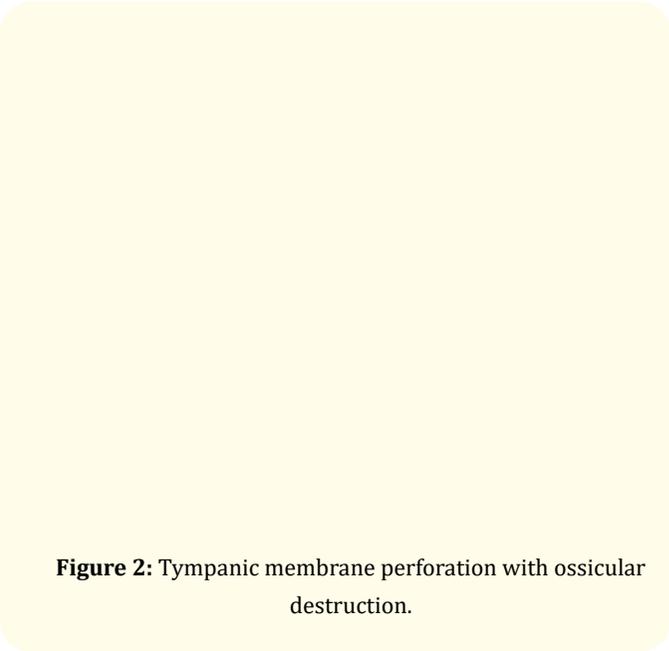


Figure 2: Tympanic membrane perforation with ossicular destruction.

Figure 3: Pure tone audiometry showing right sided conductive hearing loss.

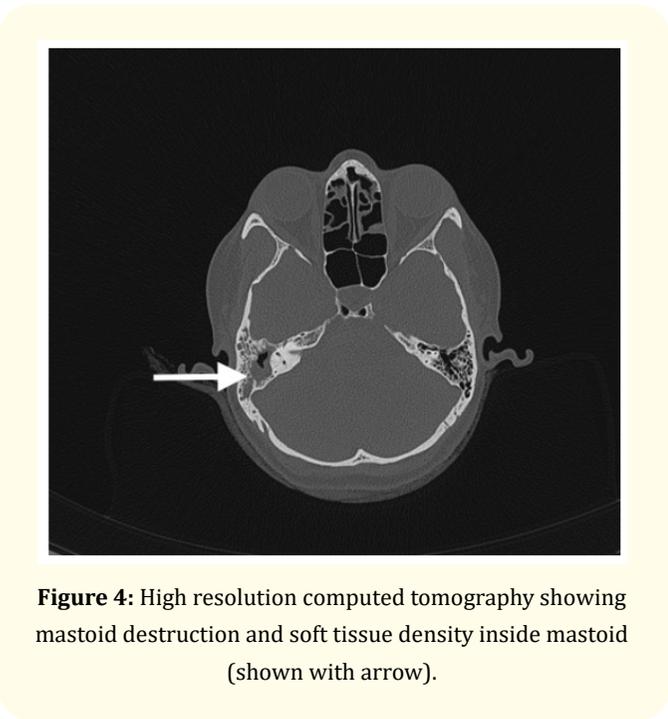


Figure 4: High resolution computed tomography showing mastoid destruction and soft tissue density inside mastoid (shown with arrow).

clude painless ear discharge, multiple tympanic membrane perforations and early disproportionate hearing loss. In our patient, we also encountered similar clinical features except that of multiple perforations. But due to the superimposed bacterial infection, the typical clinical features are not seen usually [4]. There may not be any evidence of tuberculosis elsewhere. It can also present as otalgia with otorrhea or even as facial palsy [6]. General clinical features of tuberculosis such as weight loss need not be a feature in this disease entity.

It is often difficult to diagnose tubercular otitis media, as most of the cases present as chronic otitis media not responding to common antibiotic therapy as depicted in our patient. On surgical exploration, the middle ear cavity and mastoid may be filled with inflammatory granulation tissue. Definitive diagnosis is often attained by demonstration of acid fast bacilli (AFB) in the granulation tissues with or without culture of mycobacterial tuberculosis. Imaging techniques such as computed tomography scans has only limited role in diagnosing tubercular otomastoiditis, as it shows only multiple soft tissue density in middle ear and mastoid erosion. However, absence of aggressive symptoms in proportionate to the aggressive radiologic findings such as bone erosion should arise the suspicion of tubercular otitis media [6]. In our patient there was bone erosion in the mastoid which again mislead us to reach a conclusion of squamosal CSOM preoperatively.

The differential diagnosis of tubercular otitis media includes cholesteatoma, Wegeners granulomatosis, sarcoidosis, syphilis, malignant otitis externa, non-mycobacterial infections and Langerhans cell histiocytosis [7]. A high clinical suspicion is necessary for the early diagnosis of tubercular otitis media whenever we get atypical clinical presentation of CSOM. After definitive diagnosis of tubercular otomastoiditis, the main modality of treatment is medical therapy by anti-tubercular therapy. If the disease presents with complications, surgical interventions can be added to the drug therapy. Surgical intervention without adequate drug therapy can cause fistulae, non-healing of sutures and failure of tympanoplasty [8].

Conclusion

The presentation of tubercular mastoiditis can be similar to squamosal chronic suppurative otitis media. It should always be one of the differential diagnosis when such cases do not respond to

conventional antibiotic therapy. Early correct diagnosis can avoid unnecessary surgeries and its complications.

Conflict of Interest

No conflict of interest was declared by the authors.

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