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**Title : PRIMARY TUBERCULOSIS IN UNSAFE  
OTITS MEDIA: A CASE REPORT WITH  
LITERATURE REVIEW**

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## A Case Report

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# Primary Tuberculosis In Unsafe Otits Media: A Case Report With Literature Review

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### **Declaration**

The Declaration of the authors for publication of Research Paper in Asian Journal of Modern and Ayurvedic Medical Science (ISSN 2279-0772) Dr. Maitri Kaushik<sup>1</sup>, Dr.Vikrant Sagar<sup>2</sup>, Dr. Sumit Dokwal<sup>3</sup>, Dr. Piyush Bansal<sup>4</sup>, Dr Jai Kumar<sup>5</sup> the authors of the research paper entitled Primary Tuberculosis In Unsafe Otits Media: A Case Report With Literature Review declare that , We take the responsibility of the content and material of our paper as We ourself have written it and also have read the manuscript of our paper carefully. Also, We hereby give our consent to publish our paper in ajmams , This research paper is our original work and no part of it or it's similar version is published or has been sent for publication anywhere else.We authorise the Editorial Board of the Journal to modify and edit the manuscript. We also give our consent to the publisher of ajmams to own the copyright of our research paper.

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### **Abstract**

Tuberculous otitis media is now a days not common. Accordingly, the correct diagnosis sometimes gets delayed causing complications, for instances, irreversible hearing loss, facial nerve paralysis, and so on. The diagnosis is further difficult when aural cholesteatoma is combined with tuberculosis of the middle ear. Recently, we experienced a case of tuberculous otitis media combined with cholesteatoma in both the ears with complication. Right ear had facial paresis with a meato mastoid fistula and the left ear had labrynthine fistula. There was no clinical feature suggestive of tuberculosis. He was operated on with a presumptive diagnosis of complicated chronic otitis media with cholesteatoma. Postoperatively the diagnosis of tuberculosis with cholesteatoma was established by AFB smear and culture examination. Thus it is imperative that any patient with a long history of discharging ears with complication should be screened for tuberculosis by culture and staining, as tuberculosis might be the cause of infection. We report our findings in this patient and discuss the relationship between the tuberculosis and chronic otitis media with review of literature.

### **Introduction:**

Tuberculosis is still one of the most common infectoius disease in developing country Tubercular bacillus was first documented in otic discharge in 1883 [1] . Literature has described many characteristic clinical features, including a profuse painless purulent

otorrhoea, abundunt granulation tissue, bony necrosis, profound hearing loss, multiple perforations of the eardrum, and facial paralysis. The hearing loss is out of proportion with the aparent degree of disease seen in otoscopy.[2]. Post operative specific feature are failure to respond to the usual medical



therapy, post-mastoidectomy recurrence of granulation tissue, slow wound healing, persistent otorrhea, and the formation of bony sequestra.

The incidence of tuberculosis in middle ear is difficult to assess as most of the large reported series have been selected from hospitalized subgroup with diagnosed tuberculosis. It is difficult to assess its true incidence as the large reported series have been selected from hospitalized sub-groups with established tuberculosis [3, 4]. Majority of tubercular cases of ear reported have been secondary to infection to lung, larynx, pharynx, and nose with primary tuberculosis of the ear very rarely being reported [3]. However western literature reports an incidence rate of around 0.04% [5]. The incidence rates have been showing a decreasing trend due to over all declining incidence of tuberculosis itself. However, in those areas where tuberculosis is endemic, data have shown that there has been a steady increase in its incidence [6]. It is also

notable though rare whenever tubercular otitis media occur it is associated with severe morbidity and serious complications like early destruction of the middle ear conductive mechanism, facial paralysis, cochlear involvement with labyrinthitis and SNHL and intracranial infection [3]. Not many studies have been reported with presence of tubercular otitis media with cholesteatoma with automastoidectomy, so the incidence of unsafe otitis media with tuberculosis is not known.

We present a case report of a patient having bilateral chronic otitis media with complication of

#### **Case Report:**

A 50 year male patient presented to our department with history of purulent otorrhoea and reduced hearing from the both ears. The symptoms in right ear were since childhood and that of left ear was since seven months. Patient also had facial asymmetry since childhood as in Fig 1. He also began to experience severe giddiness for seven months.



*Fig 1. Facial asymmetry Right*

He denied any history of headaches or any complaints related to vision. He did not give any history of evening rise of temperature, chronic cough or

hemoptysis with expectoration, anorexia or weight loss. He had taken treatment in the form of topical ear drops and some medication with no

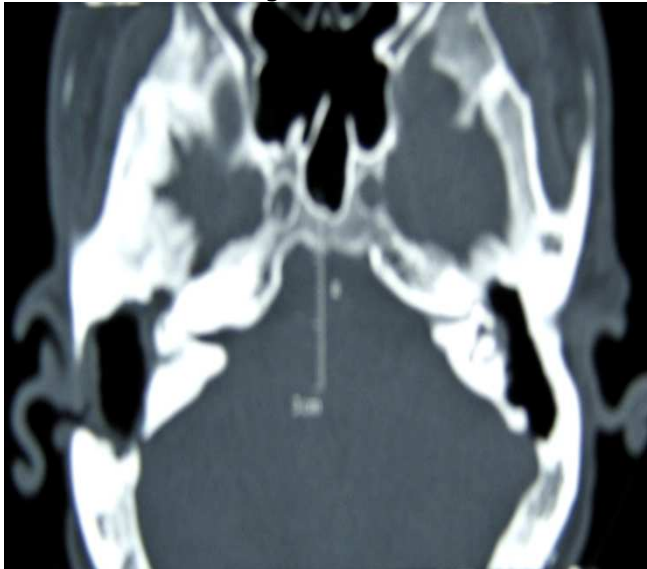


relief of symptom, though the exact details of the treatment taken was not available.

On examination of right ear a post aural fistula was found. Patient had a narrow external auditory canal with profuse purulent discharge. Pus from EAC was sent for AFB staining and culture sensitivity. After cleaning of ear it was noted that patient had a destruction of posterior meatal wall with auto-mastoidectomy. There was extensive cholesteatoma present along the attic extending up-to mastoid.

Left ear had a postero-superior retraction pocket filled with cholesteatoma along with destruction

of deep meatal wall. There was no spontaneous nystagmus, however fistula test was positive in left ear. He had right sided facial paresis with House Brackman grade IV. His Pure tone audiometry suggested bilateral profound mixed hearing loss. X ray chest was essentially normal. HRCT temporal bone suggested dehiscence of tympanic portion of facial nerve on both sides. Left side also showed a labyrinthine fistula over lateral semicircular canal Fig 2.



*Fig 2. HRCT showing destruction of middle ear cavity and mastoid air cells, destruction of all ossicles, sinus plate destruction, sclerosis of inner ear, left side labyrinthine fistula lateral SCC, B/L Dehiscent facial nerve horizontal part.*

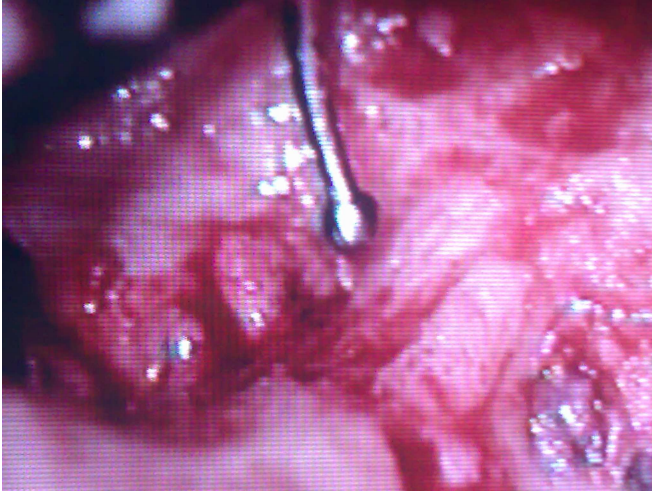
Mastoid exploration of right side revealed a meato-mastoid fistula, auto mastoidectomy and cholesteatoma filling the entire mastoid, attic and mesotympanum which was well cleared. It also showed a dehiscent horizontal facial nerve. Mastoid

exploration of left side also revealed a auto-mastoidectomy. It further had a fistula on the lateral semicircular canal (fig 3), and dehiscence of facial nerve (fig 4), sigmoid sinus and dural plate. The disease was cleared and the fistula was covered with temporalis fascia.

*Fig 3. Fistula over Lateral SCC with cholesteatoma covering*







*Fig 4. Dehiscent horizontal part of semicircular canal*

Interestingly the pus from EAC was reported to be positive for Acid Fast Bacilli. Further tissue specimen sent for HPE from both the ear also tested to be AFB positive and the culture of the same was reported to be that of atypical mycobacteria.

In the post operative period patient had significant symptomatic improvement with reduction of vertigo. He also showed an improvement in facial asymmetry with complete eye closure with minimal effort making it House Brackmann grade II (fig 4).



The patient was started on a 6-month course of empiric four-drug anti-tuberculosis treatment with oral rifampin, isoniazid, ethambutol and pyrazinamide for two month and two drug for four month.

Thus we had a patient with unsafe CSOM in both the ears with complication bilaterally and on retrospect tested to be positive for tuberculosis.

## DISCUSSION

Very few cases of tuberculous otitis media has been reported in literature and especially those with presence of cholesteatoma are very rare. With the rarity of occurrence of tubercular otitis media its diagnosis has become difficult and it becomes more difficult to make clear diagnosis when aural cholesteatoma is combined with tuberculosis of the middle ear [7]. Majority of tuberculous otitis media are secondary to primary focus of infection from lungs, and those originating primarily in middle ear are still rare. Above is such a case we recently experienced which had primary tuberculous otitis media combined with bilateral cholesteatoma with complication on both sides.

Though rare in modern day practice, the incidence of tubercular otitis media was quiet often seen in preantibiotic era. Study done by Turner and Eraser in 1915 reported that 2.8% of all cases of suppurative otitis media were due to tuberculosis [8]. The majority of these cases were within 1 year of age. Study conducted by Mills in 1997 reported a dramatic fall in incidence of tuberculous otitis media [9].

The pathogenesis of tuberculous otitis media involves one of three major mechanisms: (1) aspiration of mucus through the eustachian tube, (2) blood-borne dissemination from other tuberculous

foci, or (3) in rare cases, direct implantation through the external auditory canal and a perforated tympanic membrane [3].

In early stages of tuberculous otitis media, the drum looks thickened, hyperemic and obliterated. Perforations occur in the area of the granulation early in the disease as a result of the coalescence of the granulomas [3]. The granulomatous process often produces destruction of the ossicles which can be seen through the tympanic membrane perforation [3]. Late complications in these cases include include facial paralysis, labyrinthitis, postauricular fistulae, subperiosteal abscess, petrous apicitis, and intracranial extension of infection. Associated facial nerve paralysis is seen in approximately 16% of adult cases and 35% of pediatric cases [10]. In the present case report also the patient had facial nerve paralysis since childhood. Interestingly facial nerve palsy has been reported in cases of tuberculosis otitis media even if the anti tuberculosis therapy has been started.

Study by Yaniv et al in 1987 from their experience of tubercular otitis media in cholesteatomatous ear suggested that any patient with a long history of discharging ears needs histologic examination considering tuberculous otitis might be the cause of infection [11].

Thus this case experience of ours too supports the fact that in any case of chronic cholesteatomatous otitis media with complication, tuberculosis should be looked for as a possible cause of the disease.

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