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PRIMARY TUBERCULAR OTOMASTOIDITIS : A DIAGNOSTIC DILEMMA

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ABSTRACT

Introduction: The symptomatology of tuberculosis is such that it can disguise any disease. Its presentation as primary otomastoiditis is quite rare.
Clinical case: We report a rare case of tubercular otitis media in young male who presented with recurrent otorrhea, post aural fistula with CT scan revealing destruction of dural plate and underwent mastoidectomy twice. Adequate treatment was possible only after obtaining a specific diagnosis following histopathology and culture examination after second surgery.
Conclusion: Although TBOM is a rare entity these days but surgeons and physicians need to be aware of this possibility especially in patients with otitis media not responding to usual treatment or in those having typical features of TBOM . Early diagnosis can only avoid unnecessary multiple surgeries but can also prevent dreaded complications of Tuberculosis OM if treated timely.

KEYWORDS

Tubercular otitis media,mastoidectomy, acid fast bacilli, anti tubercular therapy

INTRODUCTION

Tuberculosis is a major health issue in the developing countries, with over 8 million new cases of tuberculosis being diagnosed annually.[1]Tuberculosis in both endemic and non-endemic areas predominantly involves lung and lymph nodes but tuberculosis of Temporal bone is a rare entity these days. In pre- antibiotic era, around 2-8% of all cases of chronic otitis media were tuberculous in nature.[2] Mills study reported that incidence of tuberculosis of Temporal bone has fallen significantly since the beginning of 19th century.

Majority of TB Otitis Media are secondary to TB in lungs or other adjacent viscera and very few cases of primary TB Otitis Media have been reported in the literature. [3]Currently, Tuberculous otitis media (TBOM) may be responsible for 0.05% and 0.9% of chronic middle ear infections.[4]Due to this decrease in incidence of primary TB and its nonspecific, varied symptoms diagnosis of TB in ear is usually missed, especially in patients with no other foci of TB.

In view of this diagnostic dilemma and resultant high rate of complications of primary TB we presents a case of otitis media who was initially diagnosed and treated as CSOM mastoid abscess. In this patient MRM was done twice with complete clearance of disease but still had a discharging ear . He later responded well to ATT after being diagnosed Tuberculous Otitis media (TOM) following second surgery.

Clinical case

A young 16 year old male patient visited our outpatient department in with history of recurrent episodes of left sided otitis externa and otorrhea since one year. On examination he had complete obliteration of external auditory canal with post aural abscess. Tympanic membrane couldn't be visualised. Pure tone audiometry revealed left profound hearing loss. Incision and drainage was performed for the mastoid abscess. Complete hemogram , liver function test and kidney function tests were done and were within normal range. The ESR was raised upto 70. On further evaluation, high resolution computerised tomography of the temporal bone was consistent with findings such as mastoiditis with erosion of the lateral cortex, abscess in external auditory canal and erosion of tegmen tympanicum. Patient was prepared for canal wall down mastoidectomy.

During the surgery, we found erosion of lateral cortical wall as well as of post external auditory canal wall along with granulations filling the entire mastoid cavity and middle ear. To our surprise, we found extradural abscess with granulations attached to dura. The abscess was drained and carefully the granulations were removed. The cavity was saucerised and meatoplasty was done. Though we had sent the granulations for histopathological evaluation but features suggestive of tuberculosis could not be seen following first surgery. The post operative period was uneventful , except that patient had complaints of persistent otorrhea that was not responding to the usual course of multiple antibiotics prescribed for the same.

After a period of one month, our patient developed abscess in the temporal region. The HRCT temporal bone revealed large heterogeneously enhancing soft tissue density in left ear involving mastoid, middle ear and external auditory canal and extending to infratemporal masticator space, pre auricular space with destruction of ossicles, tegmen tympani, with erosions and enhancement of adjacent dura (Figure 1, Figure 2, figure3). He was posted for revision surgery. The intraoperative findings were again multiple granulation tissue filling the entire operated cavity with extradural abscess and peridural adherent granulations. The granulations were cleared and sent for histopathological examination. HPE this time revealed caseous necrosis consistent for tuberculosis. Also, the pus culture showed growth ofacid fast bacilli.

Post operatively he was started on anti tubercular therapy category one consisting of Rifampicin 150 mg, Isoniazid 75mg, Pyrazinamide 400 mg and Ethambutol 275 mg for a period of two months followed by Isoniazid 75mg, Pyrazinamide 400 mg and Ethambutol 275 mg for period of 4 months. The patient responded well to the treatment regime and had a well healed mastoid cavity with no recurrence.

DISCUSSION:-

Tuberculous Otitis media is mainly caused by HOMINIS & BOVIS

variety of mycobacterium Tuberculosis.[2] Route of entry of tubercular bacilli in the middle ear is mainly due to ascending infection through the Eustachian tubebut can occasionally be via external auricular canal or through blood stream.[2] Other rare route reported are Tranplacental transmission and vaginal transmission during delivery.[5] It usually presents with painless otorrhea which fails to respond to usual antibiotics treatment, thick aural discharge, pale granulations in the middle ear and bone necrosis. Thereare high rate of complications in the patient compared to usual CSOM. Late complications includesfacial palsy, periauricular fistula, labyrinthitis and intracranial spread of disease. False-negative cultures of Mycobacteria often occur because other interfering bacteria are present in the specimen.[4]

Presence of granulomas ,langhans cells & caseation necrosis with PCR positivity is quite diagnostic of tuberculosis in the sample .[6]AFB staining of the ear discharge is not very specific or sensitive due to the presence of other bacteria in the sample ,which at times hamper multiplication of mycobacterium tuberculosis.[4]

CT Scan is the best radiology investigation and it can further help in the diagnosis ofTBOM, although most of its findings like bone demineralization, bone erosion and soft tissue attenuation are non specific, but it does help in deciding the treatment plan.[7]

After making the diagnosis of TBOM treatment of choice is ATT category 1 that is 4 month of 4 drugs (I,R,P,E) followed by 2 drugs (I & R) for next 2 month . Surgery is only done in few cases these days for either decompression of facial nerve in cases of facial nerve palsy or for removal of dead sequestra from the temporal bone. Surgery can also facilitate obtaining histopathological sample for diagnosis of TBOM like in our case during second MRM, presence of pale granulation & sequestra gave a strong suspicion of TBOM. It was also possible to obtain some of this tissue for HPE during surgery in our patient.

CONCLUSION

Although TBOM is a rare entity these days but surgeons and physicians need to be aware of this possibility especially in patients with otitis media not responding to usual treatment or in those having typical features of TBOM . Early diagnosis can only avoid unnecessary multiple surgeries but can also prevent dreaded complications of Tuberculosis OM if treated timely.

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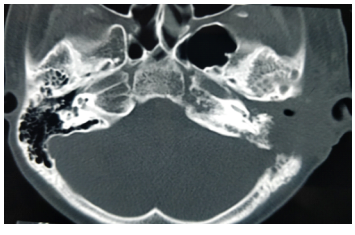

Figure 1: HRCT Temporal bone axial cuts showing large heterogeneously enhancing soft tissue density in left ear involving mastoid, middle ear and external auditory canal

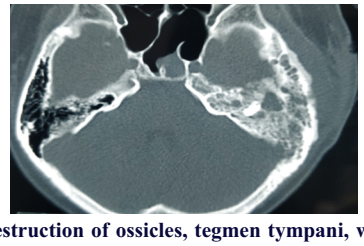

Figure 2: destruction of ossicles, tegmen tympani, with erosions and enhancement of adjacent dura

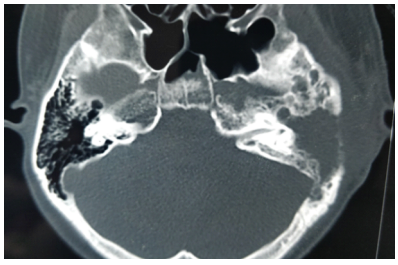

Figure 3: thinning of dural plate and sigmoid plate on HRCT temporal bone

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