Volume-12/Issue-I/June 2024/ISSN No.-2321-3450
CASE REPORT
DOI: http:/doi.org/10.36611/upjohns/volume12/Issue1/7
Date received: 30.4.2024 / Date Published : 30.6.2024

PRIMARY TUBERCULAR OTITIS MEDIA PRESENTING AS BEZOLD'S ABSCESS WITH FACIAL NERVE PARALYSIS

Authors: Akhil Pratap Singh*(1) Deepa Singh (2)
Authors Affiliations: (1) Associate professor, (2) Junior resident, Department of ENT & Head Neck Surgery Sarojini Naidu Medical College, Agra

ABSTRACT

INTRODUCTION

Tuberculosis of the middle ear cleft is a rare extra-pulmonary manifestation. Signs and symptoms of tuberculous otitis media are indistinguishable from that of non-tuberculous otitis media making early diagnosis difficult.

MATERIAL & METHODS

Here we present 14 years old, case of malnourished male with a history of poor immunisation and contact TB in neighbourhood was admitted in our hospital in December 2023 with right ear otorrhea, hearing loss, fever with Bezold's abscess post aurally and peripheral facial nerve paralysis.Ear Discharge was from childhood, the recent episode of fever with post aural swelling developed over 1 week. Examination of right ear showed copious amount of mucopus which was cleaned to visualise granulation tissue with retracted tympanic membrane.

CONCLUSION

Tuberculosis should be suspected in all cases of chronic otitis media unresponsive to conventional treatment particularly in endemic areas. Histopathological examination and AFB staining of tissue removed during mastoid surgery are reliable diagnostic methods.

KEYWORDS

Tubercular, otitis media, facial paralysis, Bezold's abscess, mastoidectomy

INTRODUCTION

Tuberculous otitis media is a rare suppurative granulomatous infection of the middle ear and temporal bones. It is associated with substantial morbidity, and a delay in initiating therapy can lead to serious complications such as early destruction of the middle ear conductive mechanism, facial paralysis, cochlear involvement with labyrinthitis and sensorineural hearing loss, and intracranial dissemination of infection. When comparing remote epidemiological data to the present day, a drastic reduction in the number of cases is observed due to antitubercular therapy. At the beginning of the twentieth century, 3–5% of cases of chronic suppurative otitis media had a tuberculous aetiology; currently, such cases have reduced to 0.05–9% today.1

The incidence of tuberculosis in the middle ear is very low; tuberculosis accounts for only 0.04 % of all cases of chronic suppurative otitis media.' When it does occur, it is associated with substantial morbidity, and a delay in initiating therapy can lead to serious complications. These complications include early destruction

of the middle ear conductive mechanism, facial paralysis, cochlear involvement with labyrinthitis and sensorineural hearing loss, and intracranial dissemination of infection.2 Primary TOM is even more uncommon, and only a few paediatric cases have been reported in the English literature3. Because TB is such an uncommon cause of chronic infection in the middle ear and mastoid the index of suspicion is low and the diagnosis is quite difficult.

MATERIAL AND METHODS

We are presenting a case report of a 14 years old boy who was admitted to our side for management of right chronic otitis media, squamosal type with complications such as bezold's abscess and facial nerve paralysis. Micro-biology of the ear discharge showed that it was tubercular in origin. Canal wall mastoidectomy with cartilage shielded type 4 tympanoplasty with concho-meatoplasty was done and anti-tubercular treatment started. The patient showed improvement in facial paralysis and abscess was resolved.

OBSERVATION

A 14 years old malnourished male with a history of poor immunisation and contact TB in neighbourhood was admitted in our hospital in December 2023 with right ear otorrhea,hearing loss,fever with bezold's abscess post aurally and peripheral facial nerve paralysis.The parents reported that he had complain of bilateral ear discharge since childhood.The recent episode of fever with post aural swelling developed over 1 week.On admission, the patient was pale and pyretic with 101^{0}F and tachycardia (heart rate 102/min), Blood pressure 92/50mmhg.The child was toxic looking with Body mass index of 14.2 kg/mm^{2}.

Fig.1 Housemann Brackmann grade V Right facial nerve palsy.

Fig.2 Bezolds abscess

Fig.4 Right ear otoendoscopy showing granulation tissue and retraction of tympanic membrane.

Examination of right ear showed copious amount of mucopus which was cleaned to visualise granulation tissue with retracted tympanic membrane(fig.4).The left ear too had a subtotal perforation of tympanic membrane.Right post auricular cystic swelling with erythema and tenderness was noted extending upto upper 1/3rd of sternocleid-omastoid muscle(fig.2).Right facial nerve function was houseman brackmann grade V.Rinne was negative in bilateral ears with 256hz,512hz & 1024 hz. Weber was lateralised to right ear. Audiometry was reported as bilateral moderate conductive hearing loss (48db in right ,51.3db in left. (fig.6)]

Laboratory values included white blood cell count of 24,500 cells/mm3 (with 82% segmental neutrophils,13% lymphocytes,3% eosinophils,2% monocytes), haemoglobin 7.5 g/dl and platelets 0.90 lac cells/mm3.Urine culture as well as sputum examination were negative. Pus culture from right ear and post aural abscess was positive for acid fast bacilli(fig.6).CBNAAT for gastric aspirate, sputum and pus was negative. The chest x ray was normal.

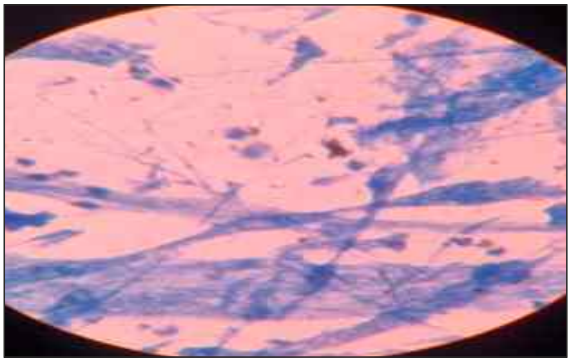

Fig.5 Ziehl neelsen staining acid fast bacilli

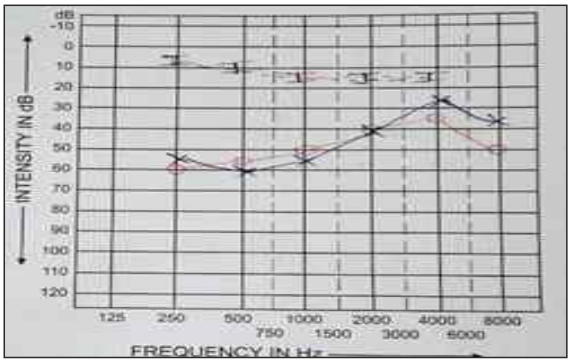

Fig.6 Pure tone audiometry

Computed tomography of temporal bones was obtained with contiguous 1mm axial and coronal cross sections. Right side showed fluid to soft tissue attenuated density in middle ear cavity, mastoid antrum, aditus ad antrum, prussack's space and mastoid air cells causing osteolytic destruction of mastoid air cells trabeculae with thinning of tegmen mastoidium. It also showed focal defect on posteromedial aspect of mastoid part of temporal bone leading to extension of collection to extradural space of posterior cranial fossa(fig.7).Another focal defect on inferior aspect of mastoid part of temporal bone was noted through which collection extended along sternocleidomastoid muscle measuring 20*21.4*22cm in SCM.In left ear, fluid to soft tissue attenuated density was noted in middle ear cavity,mastoidantrum, aditusad antrum, prussack's space and mastoid air cells.

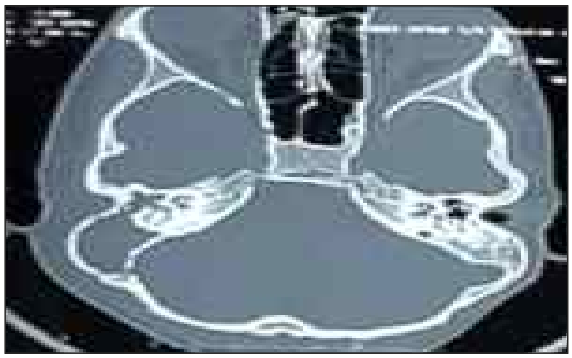

Fig.7 HRCT bilateral temporal bones showing osteolytic destruction of mastoid cortex.

Patient was taken on antipyretics and antibiotics and 2 units PRBCs were transfused.Incision and drainage of bezold's abscess was performed and steroid based ear drop was given. Regular sterile dressing along with supportive treatment and facial exercises were continued till the general condition of patient improved. The patient was taken for right ear surgery on 5th January,2024.Canal wall down mastoidectomy with cartilage shielded type IV tympanoplasty along with conchomeatoplasty was performed. Intraoperatively extensive granulation tissue was found and removed from mastoid cavity. Aggressive saucerisation was done along with thorough exenteration of air cells(fig.8). All the ossicles were absent and only footplate of stapes could be identified. Tegmen tympani and sigmoid sinus were found lying superficial just beneath mastoid cortex. Anterior and posterior buttress were removed. Bony canal wall was removed and facial ridge was lowered. Horizontal segment of fallopian canal was

found dehiscent. Common cavity was created. Concho-meatoplasty was done.

Fig 8. Mastoid cavity after saucerisation

Fig.9 Conchal cartilage kept over footplate of stapes. and removal of cholesteatoma

Conchal cartilage was used for ossicular reconstruction by placing it over stapes footplate and then superficial temporalis fascia graft was kept over the cartilage(fig.9). Antibiotic soaked gelfoam was kept and well sized merocele was packed in meatus. Wound closure was done using vicryl 3-0 and ethilon 3-0. Mastoid dressing was done and post operative care with intravenous steroids given. Fixed dose combination of oral Anti tubercular drugs containing Isoniazid, Rifampicin, Pyrazinamide was started. Mastoid dressing was removed on post op day 3rd and improvement was noted in facial paralysis from grade 5 to grade 3.

Fig.11 Immediate post operative houseman brackmann grade 3

DISCUSSION

The incidence of tuberculosis in the middle ear is very low; tuberculosis accounts for only 0.04 % of all cases of chronic suppurative otitis media. Hence the diagnosis is often difficult in such patients. In our case, the patient was a malnourished child with positive history of inadequate immunisation and contact TB in neighbourhood. Ear discharge and associated complaints like weight loss, fever, loss of apettite drew our attention to investigate about tuberculosis. The sputum and gastric aspirate were negative for acid fast bacilli but the ear discharge showed abundant acid fast bacilli which were isolated from the bezold's abscess too. Immediate surgery and antitubercular treatment not only improved the patient's general condition, but also improved facial palsy to grade 3 with alleviation of symptoms like fever, post aural swelling and ear discharge.

CONCLUSION

Tubercular otitis media cases have declined since the Anti tubercular treatment has been introduced in medical health. Any patient presenting with ear discharge is less likely to be thought of as tubercular due to its low incidence, hence the diagnosis is delayed or even missed in most of the cases. No treatment or delayed start of adequate treatment leads to complications which are difficult to revert after certain stages. Bezold's abscess is very less reported as complication of tubercular otitis media, though facial paralysis has been observed more often. Meticulous observation and careful management is required to diagnose such cases and intervene as early as possible to prevent life threatening complications.

DECLARATION

Ethics approval and consent to participate: No ethical approval is required

Availability of data and material: The data sets during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Author's contribution: All the authors contributed to the study conception and design.

Competing interests: The authors declare that they have no competing interests

Funding: The study was self funded.

REFERENCES

1. Andressa Alencar Sousa, Carolina da Costa Silva Porto & Luiz Fernando Manzoni Lourençone (2023) Tuberculous otitis media case report: Clinical manifestation, evaluation and management, Acta Oto-Laryngologica Case Reports, 8:1, 144-148, DOI: 10.1080/23772484.2023.2271166
2. Awan MS, Salahuddin I. Tuberculous otitis media: two case reports and literature review. Ear Nose Throat J. 2002 Nov;81(11):792-4. PMID: 12472035.
3. Thomas, R.P., Varghese, S.S., Agarwal, V. et al. Tuberculous otitis media masquerading as malignancy: a diagnostic challenge. Egypt J RadiolNucl Med 53, 172 (2022). https://doi.org/10.1186/s43055-022-00859-0
4. Eswaran S, Kumar S, Kumar P. A Rare Case of Primary Tuberculous Otitis Media with Bezold's Abscess. Indian J Otolaryngol Head Neck Surg. 2019 Nov;71(Suppl

2):1462-1466. doi: 10.1007/s12070-018-1554-6. Epub 2018 Dec 8. PMID: 31750197; PMCID: PMC6841894.

5. Vaamonde P, Castro C, García-Soto N, Labella T, Lozano A. Tuberculous otitis media: a significant diagnostic challenge. Otolaryngol Head Neck Surg. 2004 Jun;130(6):759-66. doi: 10.1016/j.otohns.2003.12.021. PMID: 15195064.
6. Windle-Taylor PC, Bailey CM. Tuberculous otitis media: a series of 22 patients. Laryngoscope. 1980 Jun;90(6 Pt 1):1039-44. doi: 10.1002/lary.1980.90.6.1039. PMID: 6770207.
7. Nawaf Aljehani, Abdulazeez Alzailaie, Jihad Nassar, Primary tuberculous otomastoiditis complicated with Bezold's, postauricular, and subdural abscesses: a case report and review of the literature, Journal of Surgical Case Reports, Volume 2023, Issue 4, April 2023, rjad176, https://doi.org/10.1093/jscr/rjad176
8. Andressa Alencar Sousa, Carolina da Costa Silva Porto & Luiz Fernando Manzoni Lourençone. (2023) Tuberculous otitis media case report: Clinical manifestation, evaluation and management. Acta Oto-Laryngologica Case Reports 8:1, pages 144-148.
9. Truong, Tran Minh1,; Uyen, Tran Hanh1. Tuberculous Otitis Media with Osteomyelitis of the Regional Craniofacial Bones. International Journal of Mycobacteriology 9(3):p 319-321, Jul–Sep 2020. | DOI: 10.4103/ijmy.ijmy_112_20
10. Dange PS, Raj PA. Bilateral Tuberculous Otitis Media with Cerebellar Abscess in an Immunocompromised Child. Pediatr Inf Dis 2022;4(4):147-150

***Corresponding Author:**

Dr. Akhil Pratap Singh

Associate professor, Department of ENT & Head neck surgery, Sarojini Naidu medical college, Agra

Email: dr.akhilpratapsingh1@gmail.com

ORCID ID-0000-0001-6202-9157

How to cite this article

Singh A.P. etal; Primary tubercular otitis media presenting as bezold's abscess with facial nerve paralysis; UPJOHNS; June24; 12(1); page: 41-46