

# Tuberculosis of the parotid gland and the middle ear: a rare case report

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## Aim

Tuberculosis of parotid gland is a rare entity only about a hundred cases have been reported till date. An associated tubercular otitis media is very rare. The present case was diagnosed by montoux test and treated successfully by ATT.

## Case report

A 26-year old lady attended our OPD with complaints of swelling over rt. parotid area and discharge from rt. ear since 5 and 3 months respectively. clinical examination, revealed a, non tender, soft, fluctuant parotid swelling of 4x2 cm, with rt. level 1b lymphadenopathy and granulations at annulus and dull, lustreless retracted TM with discharge. FNAC of parotid and granulation biopsy revealed epitheloid and giant cells with no caseation. Z-N stain for AFB, chest radiograph, serum ACE levels were unremarkable. Montoux test was positive (20\*20mm) and ESR was 42 mm/hr. A CT scan showed isodense mass with hypodense centre and rim enhancement in the rt. parotid gland and MRI on T2W images had mastoiditis and middle ear mucosal disease. The patient was advised ATT and had remarkable improvement.

## Conclusion

Parotid gland and middle ear tuberculosis is rare. FNAC and Z-N staining of the aspirate, should be routinely done. Further an AFB negative presumptive diagnosis by this method may prompt a trial of ATT which can be rewarding.

## Keywords:

middle ear, Mantoux test, parotid, tuberculosis

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## Introduction

Tuberculosis in the parotid gland is an infectious disease, which manifests by an increase in the gland volume, making it lobulated and ultimately causing lymphadenitis. Only few cases of tuberculosis of the parotid gland with middle ear affliction have been reported in the literature. Parotid tuberculosis must be part of the differential diagnosis of tumors that increase parotid volume. It is difficult to assess its true incidence, as the large series of patients reported has been selected from hospitalized subgroups with established tuberculosis [1]. These patients usually have the initial symptom of painless otorrhoea. The possibility of tuberculosis is considered only when there are extensive pale granulations in the middle ear, with sensory neural deafness or facial palsy. Early diagnosis and prompt treatment is of paramount importance in preventing otological and the possible intracranial extension.

We report a case of a young woman who had parotid swelling initially, followed by mastoiditis, which was provisionally diagnosed to be of tubercular origin [acid fast bacilli (AFB) -ve, Mantoux test +ve] without lung involvement and had excellent response to antitubercular treatment (ATT).

## Case report

A 26-year-old woman presented with complaints of swelling over the right parotid area since 5 months and discharge from the right ear since 3 months. Clinical examination of the parotid region revealed a nontender, soft, fluctuant parotid swelling of 4 × 2 cm with right submandibular lymphadenopathy. On ear examination, granulations were found at the annulus, and the tympanic membrane was dull and lusterless. In addition, nonfoul smelling moderate amount of mucopurulent discharge was found in the external auditory canal. Facial nerve function was normal. Fine needle aspiration cytology of the parotid gland and lymph nodes, along with the biopsy of the granulation tissue, revealed presence of epitheloid and giant cells with absence of caseation. Ziehl–Neelsen staining for AFB, chest radiography and serum angiotensin converting enzyme levels were unremarkable. The Mantoux test was positive (20 mm diameter) and erythrocyte sedimentation rate was elevated (42 mm/h). A contrast tomography scan showed the mass in the right parotid to be isodense with central hypodense areas alongside rim enhancement (Fig. 1), and MRI showed mastoiditis and middle ear mucosal disease (Fig. 2). On performing incision and drainage over the right parotid region using a small curvilinear incision

at the angle of the jaw, 25–30 ml of thick, cheesy pus was drained. It was negative for AFB staining, and the culture did not yield any mycobacteria. The patient was treated with ATT regime of rifampicin, isoniazid, pyrazinamide and ethambutol for 2 months and of isoniazid and rifampicin for 4 months. The patient was observed for signs of healing regularly, and upon noticing the improvement after 2 weeks, it was decided to complete the regime of 6 months (Fig. 3).

## Discussion

The Southeast Asian regions, which account for about 25% of the world's population, alone carry a disproportionate rate (38%) of the world's burden of tuberculosis [2]. In India, about 30% of the population has tuberculosis, and one million people develop a highly infectious variety of tuberculosis every year. Although tubercular otitis media is believed to present with profuse ear discharge, profound hearing loss, facial paralysis and multiple perforations, it is observed by many authors that these features do not always present in all cases. Multiple perforations are hardly ever seen, which may have been present during the earlier phase of the disease. Severe or permanent hearing loss is a frequent occurrence, and pale granulations are the most significant feature reported by numerous authors, as evident in the present case. Pulmonary focus is usually present when the parotid gland is affected, with blood and lymphatic spread being the most probable routes of spread [3]. Holmes *et al.* [4] reported that the primary disease is rather rare due to the inhibiting effect saliva has over the mycobacterium. In the present case, there was neither a prior history of tuberculosis nor was it the primary focus; in addition, fine needle aspiration cytology was inconclusive and culture results were negative. There was delay and dilemma in the diagnosis of the case.

In the present case, presumptive diagnosis of parotid and middle ear tuberculosis was made based on the high prevalence of tuberculosis in India and positive Mantoux test. Hence, a trial of ATT was started. At the end of 3 months of treatment, patient had resolution of middle ear disease and parotid swelling, along with well-healed scar at incision and drainage site.

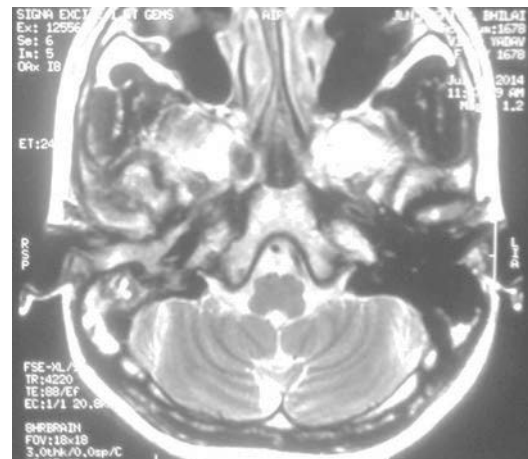
The cases treated with antituberculosis drugs recover well; therefore, recently, the role of surgery has been revised. The need for surgical management arises in case of frank abscess formation in the parotid as seen in our case and when there is neoplasm. However, in tuberculosis of the middle ear and mastoid, ear surgery

Figure 1



One large isodense lesion with central hypodensity in the right parotid superficial lobe.

Figure 2



Increased T2 weighted signal intensity s/o inflammatory pathology in the right mastoid air cells and the middle ear.

Figure 3



A patient 3 months after antitubercular treatment having no swelling and healed incision site.

should be reserved for decompression of the facial nerve and for removal of necrotic material, whose treatment might not be effective with antitubercular drugs [5].

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### Conclusion

Tubercular otitis media and parotid tuberculosis are uncommon diseases and if left untreated can result in facial palsy, sensorineural hearing loss, ossicle erosions, damage to the surrounding structures, postaural fistula and parotid sinuses. As the diagnosis at times is extremely challenging, the clinician must maintain a high index of suspicion that even AFB negative and Mantoux positive disease can still be tuberculosis. Early presumptive ATT offers every prospect of eventless healing.

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### Acknowledgements

#### Conflicts of interest

None declared.

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### References

- 1 Windle-Taylor PC, Bailey CM. Tuberculous otitis media: a series of 22 patients. *Laryngoscope* 1980; 90(Pt 1):1039–1044.
- 2 Park K. *Park's textbook of prevention and social medicine*. 17th ed. Jabalpur, Madhya Pradesh:Banarsidas Bhanot Publishers; 2002. 138–153.
- 3 Ustuner TE, Sensoz O, Kocer U. Primary tuberculosis of the parotid gland. *Plast Reconstr Surg* 1991; 88:884–885.
- 4 Holmes S, Gleeson MJ, Cawson RA. Mycobacterial disease of the parotid gland. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2000; 90:292–298.
- 5 Gupta KB, Tandon S, Mathur SK, Kalra R. Tuberculosis of middle ear – a case report. *Ind J Tub* 2000; 47:45–47.