

A Rare Case of Primary Parotid Tuberculosis

Dr. Anjanika Poddar¹, Dr. Dishant Das², Dr. Udipta Ray³, Dr. Rahul Dhar⁴

¹First Year Post Graduate Trainee, General Surgery, Fortis Hospital, Kolkata, India

²First Year Post Graduate Trainee, General Surgery, Fortis Hospital, Kolkata, India

³Director, GI, General and Robotic Surgery, Fortis Hospital, Kolkata, India

⁴Senior Consultant, GI, General and Robotic Surgery, Fortis Hospital, Kolkata, India

Abstract: *The parotid gland is a rare area of extrapulmonary involvement of tuberculosis. Parotid tuberculosis accounts for only a small percentage of all salivary gland tuberculosis cases. It may closely resemble acute bacterial parotitis or a neoplastic lesion, posing a diagnostic challenge. There have been very few reported cases even in an endemic country like India. We present a case of parotid tuberculosis in a 78 years old male, who presented with fever, painful swelling of the parotid region associated with overlying erythema. Clinical examination suggested an inflammatory process, and initial evaluation was directed towards common infective causes. However, further investigations, including cytological and microbiological assessment (CT guided core biopsy / FNAC) established the diagnosis of parotid tuberculosis. The patient was commenced on standard anti-tubercular drug therapy, following which he demonstrated progressive resolution of fever, pain, erythema, and parotid swelling, with satisfactory clinical recovery of follow-up. This case highlights the importance of maintaining a broad differential diagnosis in patients presenting with persistent parotid swelling, particularly when the clinical course is atypical or response to conventional therapy is inadequate. Early recognition and appropriate medical management can result in complete resolution while avoiding unnecessary surgical intervention.*

Keywords: Salivary gland, Pituitary gland, Tuberculosis, FNAC, Anti-tubercular regimen

1. Introduction

India has one of the world's highest tuberculosis (TB) burdens, accounting for over 25% of global cases. While more than 40% of the population carries TB infection, treatment coverage has improved, reaching over 92% in 2024. Extrapulmonary tuberculosis (EPTB) accounts for approximately 15% - 25% of all reported TB. Parotid tuberculosis is an extremely rare form of EPTB, with studies indicating that only about 100 cases have been reported in the world literature to date [1,2]. The most common forms of EPTB are lymphatic (approximately 50%) and pleural (approximately 24%). Gastrointestinal TB covers approximately 4-16%; Bones and joints approximately 6-14%; Genitourinary approximately 1-5% and head and neck approximately 10%. Diagnosis is primarily confirmed with the help of FNAC (Fine Needle Aspiration Cytology) [3]. Most of these cases have good prognosis with anti-tuberculous drugs treatment. We present the cases of a 78 years old male who was promptly diagnosed and treated accordingly and had good prognosis.

2. Case Presentation

A 78 years old male presented with a history of progressively increasing swelling in the post auricular region extending up to the lateral part of the neck on the right side. The swelling was associated with reddening and mild pain. The patient was on regular medication for type 2 diabetes mellitus, hypertension, and benign prostrate hypertrophy. He denied any history of trauma or allergic reaction.

On examination, there was a well-defined swelling on the right parotid region extending from the base of the pinna to the lateral part of the neck measuring approximately 8.5 cm × 7.5 cm. The swelling was immobile and firm in consistency

with no attachment to underlying bones or surrounding tissues. There was localized redness and increase in temperature (Figure 1, Figure 2). The patient was also running a fever ranging from 102°F to 99°F. Evidence of abscess formation was absent even on deep palpation. There was no scar mark or any sinus over the swelling. The facial nerve and cervical spine were also found to be normal. The opposite side was unremarkable. Examination of the other systems including oral cavity was essentially normal. His medical and family history was also unremarkable.

On routine investigations, hemoglobin was 11.8 g/dl (Normal for Adult Males: 13.5-17.5 g/dl; Normal for Adult Females: 12.0-15.5 g/dl), total leucocyte count was 11000 cells/cmm³ (Normal: 4000-11000 cells/cmm³), ESR was 88 mm/hour (Normal in Adult Males: 0-15 mm/hour; Normal in Adult Females: 0-20 mm/hour), CRP was 143 mg/dl (Normal: <0.5 mg/dl) and the rest of the other investigations were normal. Chest radiograph was normal. High resolution ultrasound of the neck swelling revealed a well-defined collection involving the deep lobe, extending into adjacent soft tissues and involving the right submandibular gland. Multiple enlarged cervical lymph nodes were noted as Level III: up to 1.6 × 0.76 cm and Level IIB: up to 1.6 × 1.1 cm.

CT guided core biopsy with hematoxylin and eosin staining under different magnifications revealed lymphocytic infiltrates with necrotizing exudates (Figure 3); epithelioid cell granuloma (Figure 4, Figure 6) which is characteristic of tuberculosis. ZN stain of the same showed plenty of acid-fast bacilli, consistent with tuberculosis (Figure 5). Aerobic culture and susceptibility of the tissue specimen showed no growth of any microorganism after 72 hours of incubation. Hence the diagnosis of parotid tuberculosis was made.

Following are the supporting pictures:



Figure 1: Lateral View of the parotid swelling



Figure 2: Front View of the parotid swelling

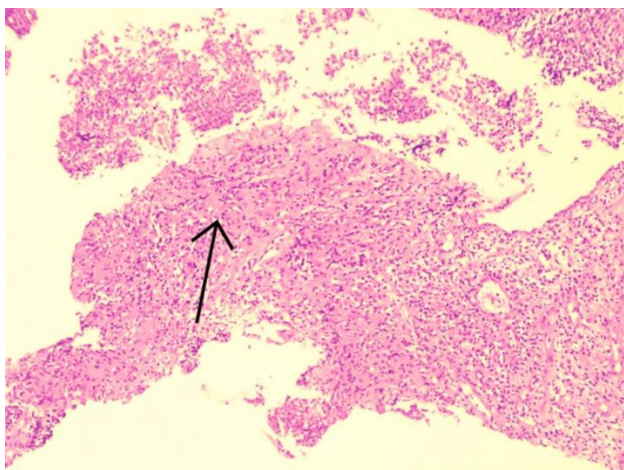


Figure 3: Photomicrograph of fibro-collagenous tissue with dense diffuse lympho-plasmacytic infiltrates and necro-inflammatory exudate (H&E 10X)

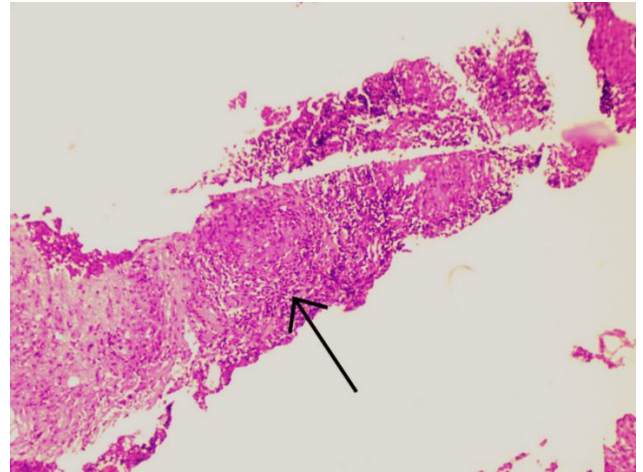


Figure 4: Photomicrograph showing multiple well-formed epitheloid cell granuloma in a lymphoid background (H&E 4X)

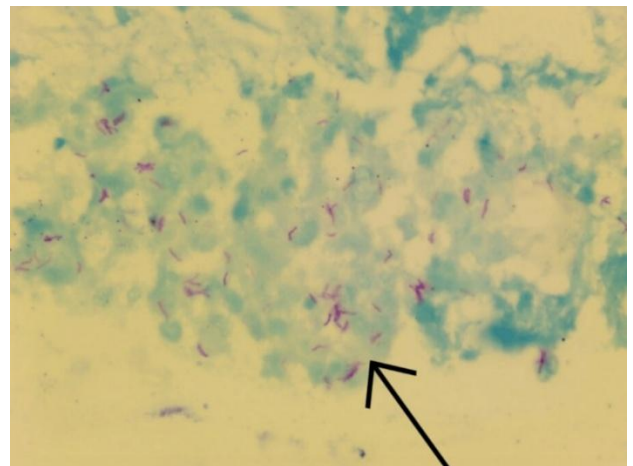


Figure 5: Photomicrograph showing plenty of micro bacilli (ZN stain 100X)

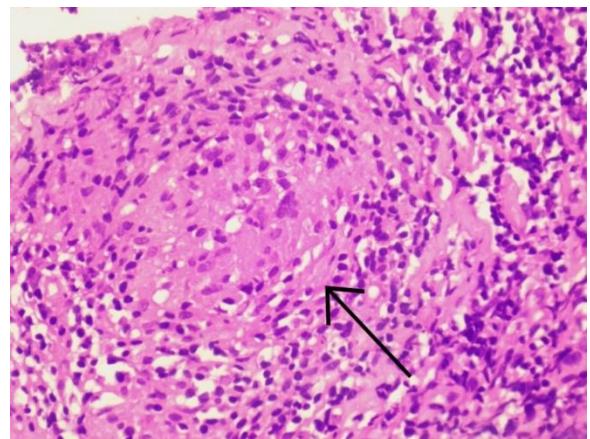


Figure 6: Photomicrograph showing epitheloid cell granuloma with central small foci of necrosis (H&E 40X)

The patient was started on anti-tubercular regimen comprising Rifampicin, Isoniazid, Ethambutol and Levofloxacin for 2 months as intensive phase followed by Rifampicin and Isoniazid for 4 months as continuous phase. This regimen happens to be the first line of treatment for new case of tuberculosis. Pyrazinamide was not included as the initial liver function test of the patient was deranged and this drug is hepatotoxic in nature.

3. Discussion

Parotid tuberculosis is a rare form of extrapulmonary tuberculosis that often presents as an enlarging parotid mass, mimicking benign or malignant neoplasms. The infection may involve either the intra-parotid lymph nodes or the glandular parenchyma through lymphatics, hematogenous, or ductal spread [4]. Parotid glands have a slow flow to saliva at rest, making it susceptible to act as a seat of tuberculosis bacteria [5]. Owing to its non-specific clinical and radiological features, pre-operative diagnosis is frequently challenging. FNAC (Fine Needle Aspiration Study) plays a key role in diagnosis by demonstrating granulomatous inflammation with epithelioid cell granulomas, caseous necrosis, and Langhans giant cells, while microbiological tests such as CBNAAT/GeneXpert or culture or Ziehl-Neelsen staining provide confirmation [6,7]. Anti-tubercular therapy remains the mainstay of treatment and prognosis is excellent in majority of cases [8]. Awareness of this uncommon entity is essential, particularly in tuberculosis-endemic regions, as early recognition can prevent unnecessary complications.

4. Conclusions

A 78 years old man presenting with fever, painful parotid swelling, and overlying erythema was ultimately diagnosed with parotid tuberculosis after appropriate diagnostic evaluation. He responded well to anti-tubercular therapy, with complete resolution of his clinical symptoms and selling on follow-up.

This case emphasizes the importance of considering uncommon etiologies in patients with persistent or atypical parotid swelling. A systematic diagnostic approach can facilitate timely diagnosis, enable appropriate medical treatment, and help avoid unnecessary surgical intervention.

References

- [1] Janmeja AK, Das SK, Kochhar S, Handa U: Tuberculosis of the parotid gland. *Indian J Chest Dis Allied Sci.* 2003, 45:67-69.
- [2] Patankar SS, Chandorkar SS, Garg A: Parotid gland tuberculosis: a case report. *Indian J Surg.* 2012, 74:179-180. 10.1007/s12262-011-0271-0
- [3] Handa U, Kumar S, Punia RS, Mohan H: Tuberculous parotitis: a series of five cases diagnosed on the fine needle aspiration cytology. *J Laryngol Otol.* 2001, 115(3):235-237. 10.1258/0022215011907073
- [4] Mert A, Ozaras R, Bilir M, et al.: Primary tuberculosis of the parotid gland. *Int J Infect Dis.* 2000, 4(4):229-230. 10.1016/s1201-9712(00)90115-2
- [5] Thakur JS, Thakur A, Mohindroo NK, Mohindroo S, Sharma DR: Bilateral parotid tuberculosis. *J Glob Infect Dis.* 2011, 3(3):296-299. 10.4103/0974-777X.83543
- [6] Sethi A, Sareeen D, Sabherwal A, Malhotra V: Primary parotid tuberculosis: varied clinical presentations. *Oral Dis.* 2006, 12:213-215. 10.1111/j.1601-0825.2005.01182.x.
- [7] Lee IK, Liu JW: Tuberculosis parotitis : case report and literature review. *Ann Otol Rhinol Laryngol.* 2005, 114:547-551. 10.1177/000348940511400710

- [8] Suleiman AM: Tuberculosis parotitis. *Br J Oral Maxillofac Surg.* 2001, 39(4):320-323. 10.1054/bjom.2001.0644