

Primary Parotid Tuberculosis Mimicking Parotid Neoplasm: A Rare Case Report

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Abstract

Tuberculosis of the parotid gland is a rare clinical entity and may indistinguishable from parotid neoplasm. Diagnosis of this condition is important because the treatment of parotid tuberculosis is medical while treatment of parotid neoplasm is surgical. We describe a case of tuberculosis of left parotid gland in a 35-year-old female patient. Fine needle aspiration was inconclusive and radiology was indicative of benign neoplasm. Superficial parotidectomy was done. A diagnosis of tuberculosis of parotid gland was made on histopathology. Patient was successfully treated with six months anti-tubercular therapy. Tuberculosis of the parotid gland should always be kept in differential diagnosis of long standing parotid swelling especially in cases of inconclusive FNAC. A high index of suspicion is always needed and surgery can be avoided.

Keywords: Parotid gland, Parotid Neoplasm, Tuberculosis,

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Introduction

Tuberculosis is chronic, granulomatous necrotizing inflammatory disease with varied clinical presentation, most commonly involving the lungs. Tuberculosis is a global health problem with 8 million people infected annually and 3 million people dying from diseases related to TB complications^{1, 2}. Extra thoracic forms

of disease accounts for 20% and is seen commonly involving kidney, bones, meninges and lymphnodes¹. Tuberculous lymphadenitis of the neck is seen in 10% of the patients suffering from extra pulmonary tuberculosis³. Tuberculosis of head and neck, excluding tuberculosis lymphadenitis of neck, account for less than 1% of all cases.

Tuberculosis of the parotid gland is very rare even in countries where tuberculosis is endemic³. On literature, 150 cases of tuberculosis of parotid gland have been reported till date in literature. The diagnosis is difficult because of its similarities in presentation to that of a parotid neoplasm. The diagnosis even more difficult in the absence of history of pulmonary tuberculosis and most cases undergo unnecessary surgery. Most of the times the diagnosis is confirmed postoperatively, especially in cases of inconclusive preoperative fine needle aspiration cytology.

Aim of the present case report is to make otolaryngologist aware of this condition to arouse high index of suspicion when the FNAC report is inconclusive for neoplasm. High number of unnecessary surgeries can be avoided where only medical management is sufficient.

Case presentation

A 35-year-old female presented with a mass in the left parotid region for five years. This swelling was of insidious onset and gradually progressive in size. There was no history of pain over the swelling,

fluctuation in the size of swelling in relation to meals, history of facial asymmetry. The swelling was initially of the size of pea and increased to present size of lemon. There was no history of recurrent cough, fever, loss of appetite. There was no family history of tuberculosis.

Physical examination revealed a 4x4 cm firm, mobile, non-tender, non fluctuant, lobulated mass occupying the superficial lobe of the left parotid gland. The skin over the swelling was normal and pinchable. There was no visible fistula or sinus over the parotid region. Stenson's duct was normal. Facial nerve function was normal. There was no palpable cervical lymphadenopathy. A provisional diagnosis of pleomorphic adenoma of parotid gland was made.

Contrast enhanced computed tomography (CT SCAN) of neck showed a well defined, solid, mass lesion of approx 4 x4 cm with an area of central lucency within the swelling, occupying the superficial lobe of the left parotid gland.(fig 1).Fine needle aspiration cytology of the swelling was done which was reported as reactive hyperplasia. A course of oral antibiotic was given and

FNAC was repeated which was reported as inconclusive.

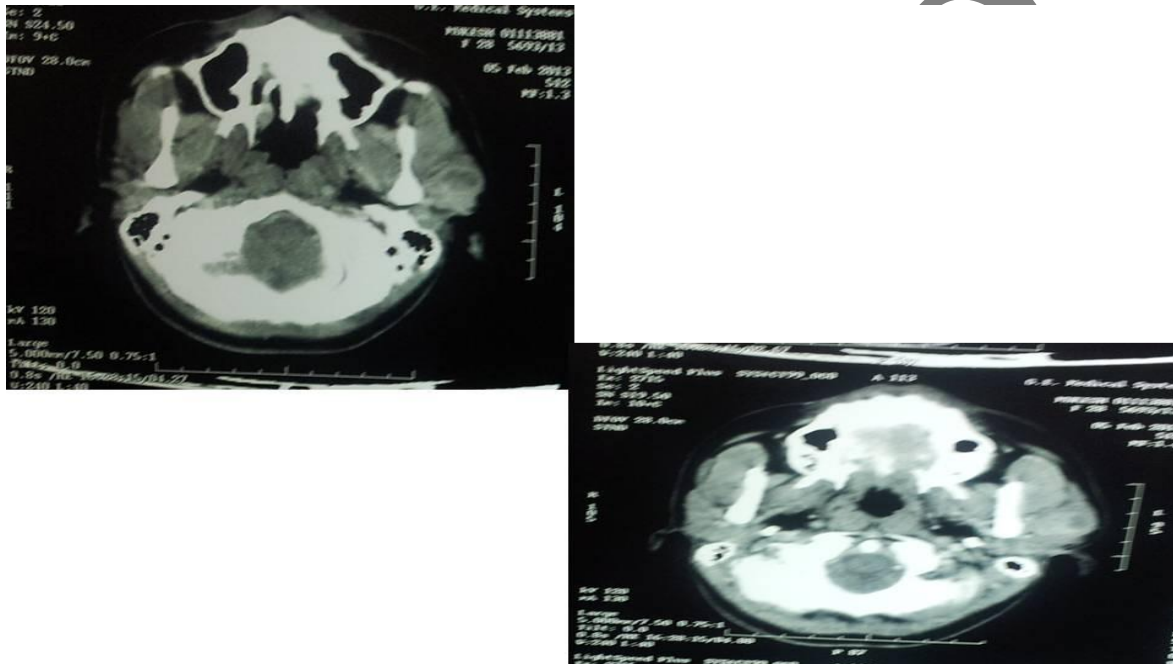


Figure 1: Contrast enhanced CT scan of neck showing well defined mass swelling in the superficial lobe of parotid gland with central area of hypo density

With possibility of parotid neoplasm in mind, superficial parotidectomy with preservation of branches of facial nerve was done. Three discrete, well encapsulated swelling was seen within the substance of left parotid gland (Figure 2). Rest of the gland was appearing normal.



Fig 2: intra-parotid lymph nodes

Histopathology showed multiple necrotizing granulomas composed of epithelioid histiocytes and Langhan's body type of giant cells and lymphocytes within the intraparotid lymph nodes with normal parotid parenchyma surrounding the lymphnodes. Stain for an acid fast bacillus was negative. (Figure 3a and 3b)

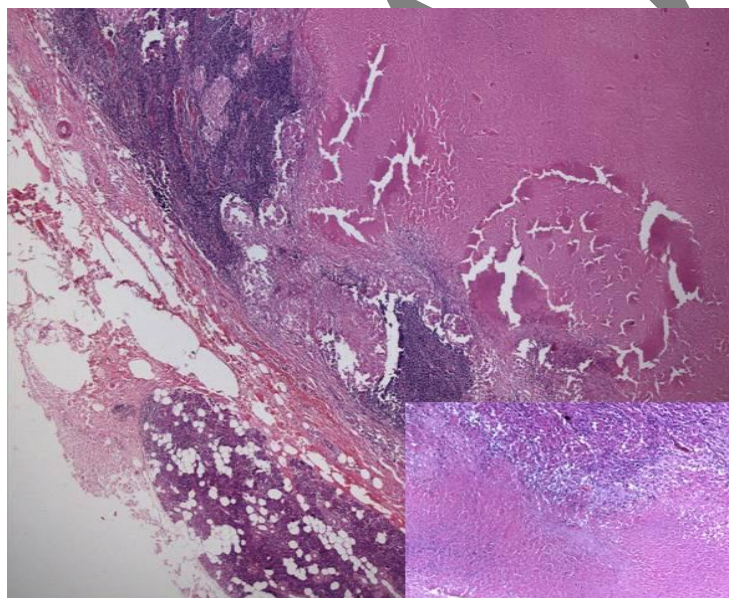


Fig 3a :Intra-parotid lymph node showing large areas of caseation necrosis

Inset: 3b:High power showing epithelioid cells bordering areas of caseation necrosis

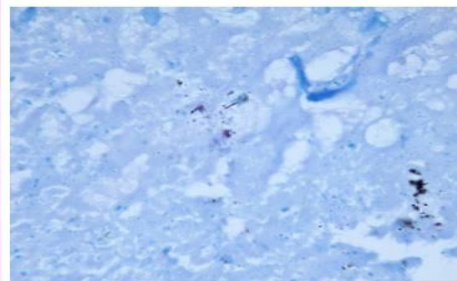


Fig 3b:Zeihl Neelson stain for acid fast bacilli

Chest X ray was normal. Montoux test was done and was reported as strongly positive (24mm). She had history of prior contact with tuberculosis or history of tuberculosis in family. Sputum for AFB was negative on three consecutive days.

In view of the histopathology and strongly positive montoux test a diagnosis of primary tuberculosis of parotid gland was made and she was started on antituberculosis therapy. She received 6 month of antituberculosis therapy. She is under our regular follow up for last 1 year and is asymptomatic and free of disease.

Discussion

Tuberculosis is endemic in developing countries and its incidence is increasing in developing countries in recent times due to increasing association with HIV and development of multi drug resistance strains. Lungs are most commonly involved in tuberculosis. Extra thoracic forms of the disease can be seen in the kidneys, bones, meninges, and lymph nodes. It accounts for approximately 20% of overall active tuberculosis^{1,2}. Tuberculosis lymphadenitis is the most common extrathoracic form and

the cervical lymph nodes are the ones most frequently involved². Parotid gland involvement is extremely rare, even in countries in which tuberculosis is endemic³. Salivary secretion is antibacterial due to presence of thiocyanate ions and lysozyme and constant flow of saliva may prevent inoculation of mycobacteria into the parotid gland⁴.

Less than 120 cases of parotid tuberculosis have been reported since the first description of this condition by von Stubenrauch in 1894^{5,6}.

The pathogenesis of involvement of parotid gland by tuberculosis remains unclear. The parotid gland and its lymph node may be involved in two ways. Firstly, Lung involvement may lead to focus in oral cavity which may liberate mycobacteria that might ascend into the salivary gland via its duct or pass to associated lymph nodes via lymphatic spread. The second pathway is via hematogenous or lymphatic spread via distant primary lung focus². Parotid gland is most commonly involved by tuberculosis than sub mandibular or sublingual gland.

Tuberculosis of parotid gland presents clinically as a slow growing mass indistinguishable from a malignancy⁷. Presentations of parotid gland tuberculosis can be varied. It most commonly presents as a localized mass, resulting from infection of intracapsular or pericapsular lymph nodes. It may also present as an acute sialadenitis with diffuse glandular enlargement. In this form the involvement is in the parenchyma of the salivary gland. It may also present as a periauricular fistula or as an abscess⁸. Parotid tuberculosis is difficult to diagnose in absence of systemic signs and symptoms and the absence of clinical disease in the lung as was seen in our case.. Most of these cases present with a slow growing mass, gradually increasing in size over two to six months and these lesions are almost impossible to distinguish from a parotid neoplasm⁹. Physical examination in general is unrewarding.

A chest radiograph may be helpful in cases of associated pulmonary tuberculosis. But less than 50% of patients with extra pulmonary tuberculosis exhibit radiologic evidence of pulmonary disease¹⁰. Our patient did not have chest radiographic

evidence of either active or prior pulmonary tuberculosis. In our case, we had a strong possibility of benign parotid neoplasm. Fine needle aspiration was suggestive of benign lymphoid hyperplasia. The use of tuberculin skin testing can provide valuable information, but requires an initial suspicion. In our case tuberculin testing was performed after the surgical excision and was strongly positive (24 mm).

The definitive diagnosis of tuberculosis depends on the isolation and identification of mycobacteria from a diagnostic specimen³. Maynard stated that there were no methods of distinguishing this infection from a parotid gland neoplasm except by histological examination¹¹. Fine needle aspiration cytology (FNAC) is advocated as a useful and reliable technique for the diagnosis of tuberculosis in the parotid gland^{1,3,6}. In parotid lesions FNAC has a sensitivity of 81–100% and specificity of 94–100%⁹.

There is no specific sign of tuberculosis in the parotid with CT/MRI. Since tuberculous infection may involve multiple sites in the parotid gland and

periparotid region, MRI may better delineate the nature of the disease than CT or US ⁹.

Excisional biopsy becomes mandatory when other investigations are non-contributory. In a meta-analysis by Lee and Liu of 49 cases of tuberculous parotitis, FNAC was helpful in only 10 cases and the diagnosis was established by parotidectomy in 34 cases¹. In our patient, we had inconclusive FNAC and we could not find any evidence of active disease elsewhere. Computed tomography was suggestive of some benign neoplasm. Surgical excision was performed in order to make the diagnosis.

The mainstay of treatment is medical in the form of antitubercular chemotherapy for at least six months. If the diagnosis can be obtained by ancillary diagnostic tools, effective antituberculous chemotherapy can lead to resolution of the lesion, avoiding the necessity of surgery¹¹.

Conclusion

Tuberculosis should be considered a very important in the differential diagnosis of patients presenting with long duration parotid swelling. Although rare but large number of unnecessary surgeries can be

avoided where medical management can suffice.

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