Case Report

Parotid Gland Tuberculosis

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Abstract

This report describes parotid gland tuberculosis in a 38-year-old female patient that presented with a firm, painless, progressively increasing swelling over the right preauricular region. Diagnostic workup including contrast enhanced computerized tomography neck and subsequent fine needle aspiration cytology of the swelling made the final diagnosis. The patient responded favorably with anti-tubercular therapy.

Keywords: Cytology, parotid swelling, tuberculosis

Introduction

Parotid gland is one of the body sites beside few others, where tuberculosis is exceedingly rare to observe even in those countries like ours where the disease is highly rampant. The parotid involvement in tuberculosis may be secondary to the primary site at the lung or oral cavity but it may rarely be seen as the true primary disease in the parotid gland itself.[1] This report describes a case of tuberculosis involving the right parotid gland in the absence of evidence of primary foci elsewhere in the body.

Case Report

A 38-year-old otherwise healthy female presented with a progressively increasing painless swelling at the right preauricular region for the past 6 months [Figure 1]. She denied any history of trauma, throat pain, and any other constitutional symptoms. On examination, there was a diffuse swelling at right parotid region, 4 cm × 6 cm size, nontender, relatively fixed to the underlying structure, mostly firm in consistency and without any change in temperature and surface of the overlying skin. No evidence of abscess formation was evident even on deep palpation. The opposite side was unremarkable. Examination of the other systems including oral cavity was essentially normal. Her medical and family history was also unremarkable.

Routine hemogram and blood biochemistry were within normal limits except a raised erythrocyte sedimentation rate (80 mm in 1st h). Chest X-ray was within normal limits. An ultrasound of the neck showed diffuse enlargement of right parotid gland involving both superficial and deep lobes [Figure 2] with tiny subcentric cervical lymph nodes measuring 0.7 cm × 0.5 cm size. Fine needle aspiration cytology (FNAC) of the lesion was advised to confirm the diagnosis. FNAC of the swelling revealed chronic inflammatory cells with numerous polymorphic populations of lymphocytes, histiocytes, epithelioid cells forming well-formed granulomas, and few multinucleated giant cells admixed with caseous necrosis in the background; suggestive of tuberculosis [Figure 3]. The tuberculin skin test also revealed a significant positive induration (38 mm at 72 h) with vesicles formation.

The patient was initiated on anti-tuberculous chemotherapy (Category I as per Revised National Tuberculosis Control Programme, India). There was a bit slow response initially with no change in the swelling size in the first 3 weeks of starting treatment but gradual response was evident thereafter with almost complete disappearance of swelling at the completion of 5th month of treatment. The swelling disappeared completely at the end of 6-month treatment. No recurrence was observed thereafter in the subsequent 1 year follow-up.

Discussion

The involvement of parotid gland in tuberculosis is not only exceedingly rare but also mostly indistinguishable from a...
malignancy, and for the same reasons, this is largely under recognised by clinicians and otolaryngologist in daily practice. Salivary glands are generally considered relatively immune to the tuberculosis infection because of antibacterial activity imparted by the thiocyanate ions and proteolytic enzymes, i.e., lysozymes. The continuous flow of saliva which prevents stagnation and multiplication of mycobacteria may be an additional inhibitory factor too. The exact pathogenesis of tuberculous parotitis remains unclear. The possible mechanisms include hematogenous spread of *Mycobacterium tuberculosis* from a distant primary pulmonary focus, ascending infection from prior infected cervical lymph nodes through lymphatic route, autoinoculation with infected sputum reaching the gland parenchyma by the afferent lymphatics or by ducts.[2,3]

There are two types of tuberculosis involvement at parotid gland. More common type is involvement of intraglandular lymph node, and other variety is diffuse involvement of gland parenchyma. Intraglandular lymph node type of tuberculosis in parotid gland often leads to abscess formation.[4] In our case, there was diffuse involvement of the parotid gland in the absence of abscess formation.

Most of such cases are seen between ages of 30 and 50 years, regardless of gender and the most common presentation is progressive painless unilateral parotid swelling as seen in our case. This presentation truly mimics malignancy.[5] The uncommon presentation includes bilateral parotid swelling, preauricular discharging sinuses, acute parotid abscess, facial paralysis, etc.[6,7] Since the presentation mostly resemble that of a neoplastic process, a clinical diagnosis may be missed most often, and subsequently this may lead to delayed diagnosis, inappropriate treatment, gland destruction, and even unnecessary parotidectomy.

The diagnosis of tubercular parotitis has traditionally been made after surgery, by histopathological examination of surgically removed parotid mass. Radiological investigations such as ultrasound, CT scan, and magnetic resonance imaging (MRI) are sensitive in detecting intraparotid tubercular lesions, but the findings are not specific. Most of the imaging features resemble neoplasm. A chest radiograph may help in detecting associated pulmonary tuberculosis if present, although it is mostly normal in such cases.[7] CT and MRI may better define the extent of the lesion and concomitant deeper lesions if any but the findings although highly sensitive are not specific and do not differentiate between inflammatory and neoplastic lesion. Certain CT features such as linearly arranged enhancing nodules at the superficial lobes of the glands and MRI features such as hypointense lesions on T1 and hyperintense on T2-weighted images with homogeneous contrast enhancement are common features in tuberculosis but again nonspecific findings.[8] Since the imaging findings are indistinguishable from neoplasm, most cases may undergo surgery like superficial parotidectomy and diagnosis being established after surgery. A preoperative diagnosis should always be attempted by FNAC of the lesion in view of its safety and good tolerability. The sensitivity of FNAC is around 81%–100% with the specificity of 94%–100%.[9] This not only makes an early preoperative diagnosis but also avoids surgery and its potential complications.

**Conclusion**

The clinician and otolaryngologist should have a high index of suspicious for tubercular parotitis while facing a chronic
parotid lump, even when there is no evidence of tuberculosis foci elsewhere in the body. All attempts should be made for early diagnosis of tubercular parotitis by FNAC as the condition can be treated completely by medical management alone.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

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