

Isolated Parotid Gland Tuberculosis in Pediatric Age Group- A Rare Entity

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Abstract

Tuberculosis is an infectious disease which is commonly prevalent in the developing countries. Still parotid gland involvement in the disease process is an uncommon phenomenon that too in pediatric population. In this study the authors are reporting a single case of parotid tuberculosis is a 3-year-old male child who presented with complaints of unilateral parotid region swelling. Fine needle aspiration cytology from the swelling site was done which confirmed tuberculosis, Ziehl-Neilsen staining also showed positive results. However, there was no pulmonary involvement which was ruled out by doing chest X-Ray. Magnetic resonance imaging was also performed. Post diagnosis patient was started on four drug regimen antitubercular therapy.

Keywords: Tuberculosis; Parotid gland swelling; Antitubercular therapy; ZN staining; Acid fast bacilli.

Introduction

Tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis* and *bovis*. Lungs are the most common site of infection however it can affect any organ of the body, still the involvement of parotid gland is an uncommon event that too the isolated involvement. Parotid gland tuberculosis was first described in 1894 by Von Stubenrach. Most of the cases of parotid gland tuberculosis in literature has been documented from India and Africa [1]. Such patients present with unilateral parotid region swelling often confusing

clinician leading to delayed diagnosis and management which may complicate the general condition of the patient adding more morbidity to the treatment. The case report is unique due to the age group and site of the disease presentation which is not commonly seen. Here, the authors are presenting single case of an isolated unilateral parotid gland tuberculosis in as 3 years old child which was diagnosed via Fine needle aspiration cytology (FNAC) followed by initiation of Antitubercular drug therapy.

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Case report

A 3-year-old male child accompanied with parents presented to ENT OPD with chief complaint of left sided facial swelling in parotid region from past 2 months. History was given by mother and was reliable. Facial swelling was insidious in onset, gradually progressively initially was a size of pea and progressed to the size of a lemon. It was associated with pain, which was diffuse, dull aching, localized to the swelling site. There was history of 1 episode of low-grade fever. There was history of recurrent upper respiratory tract infections which was resolved on taking medication i.e., syrup amoxycillin-clavulanate 475mg/5ml, 5ml three times a day. There was no previous history of tuberculosis or contact with the tuberculosis patient in recent past. No history of recent weight loss. No history of chest pain. Birth history of delivery via

lower segment cesarean section in view of previous history of cesarian section birth was present. The birthweight of child was 2.5 kgs. The patient cried immediately after birth. Post birth period was uneventful. Child was immunized up to the age. On examination all the developmental milestones were corresponding to the age of child. Upon inspection nearly 3 × 3cm single swelling seen over left side parotid region. Overlying skin changes seen with purple discoloration of skin along with excoriation over posterior part of swelling site. No sinus, fistula, pus seen. Upon palpation swelling surface was non-tender, temperature was not raised. Inspectory findings were confirmed. A single firm swelling with regular margins and smooth surface was present over left side parotid region. Swelling was mobile. Overlying skin was adherent to the swelling (Figure 1).



Figure 1: Swelling with skin changes over left side parotid region.

Wide bore needle aspiration from the swelling site was done which revealed pus and was sent for gram staining, pus culture and sensitivity which revealed pus cells however the culture was sterile for aerobic and anaerobic bacteria after 48 hours of

incubation. The Mantoux test was also performed which showed negative result.

Fine needle aspiration cytology was ordered in which predominant sheets of degenerated and viable neutrophils, lymphocytes, histiocytes and a few epithelioid cell granulomas were present in

the necrotic background. Ziehl Neelson stain for Acid fast bacilli was positive suggestive of tuberculosis.

MRI face was advised which suggested an ill-defined altered signal intensity lesion involving superficial lobe of left parotid gland. No extension noted in the deep lobe

of the left parotid gland. However, it showed extension to overlying skin and subcutaneous region (Figure 2).

To rule out pulmonary tuberculosis chest x-ray was performed which showed no abnormality (Figure 3).



Figure 2: MRI scan of face and neck with ill-defined altered signal intensity lesion involving superficial lobe of left parotid gland.



Figure 3: Chest X-Ray PA view with no abnormal findings.



Figure 4: Response to ATT with Reduction in size of swelling after 1 month.

After diagnosis was made, the patient started on medical management i.e., anti-tubercular therapy for 6 months with 4 drug pediatric regimens which includes Ethambutol, Rifampicin, Pyrazinamide, and Isoniazid. Patient responded to the treatment and there was reduction in swelling size on 1 month follow up (Figure 4a,b).

Discussion

Although tuberculosis is a common disease in India still isolated parotid gland tuberculosis is a rare phenomenon. Tuberculosis is caused by *Mycobacterium tuberculosis* and *bovis* [1]. The identified source of infection to the parotid gland is via hematogenous, lymphatic or canalicular. Lymphatic and hematogenous spread are hard to distinguish due to the interlacing of the vessels. Hematogenous infection can occur via any source of infection from the primary foci or through the wounded oral

mucosa. Lymphatic infection occurs mostly via the tonsils. Infection around the third molars may infect the parotid glands, as these lymphatics drain into the gland at the angle of the jaw via retrograde stream which usually happens in case of epithelioma of the tongue, or mandible, and therefore would be similar to the tuberculosis [2].

Tubercular parotitis clinically presents in two forms one as a localized nodular form in which the intra or extra glandular lymph nodes are frequently affected while the other forms are the diffuse parenchymatous form in which pathology involves whole of the gland. The latter type is very rare [3].

Clinical presentation of unilateral tubercular parotitis is clinically similar to that of a parotid tumor. Also, the imaging techniques may fail to unveil the true diagnosis. Fine needle aspiration is the most useful technique for diagnosis of such condition. If facial nerve palsy also coexist

with the swelling, then diagnosis will point more towards the malignancy [4]. Imaging modalities that can be used in identification of parotid tuberculosis are ultrasonography, CT and MRI. However, MRI defines the disease better than the CT scan and ultrasonography [3]. The differential diagnosis were actinomycosis, suppurative parotitis, mumps, sarcoidosis, Sjögren's syndrome and sialosis [5].

If detected early and treated properly prognosis of parotid gland tuberculosis is good and in majority of the cases surgery is not even required [6].

FNAC is a reliable diagnostic tool to establish the diagnosis. In parotid lesions it has sensitivity of 81-100% and specificity of about 94-100% [3]. Combining cytology along with the AFB staining of the aspirated materials better results are obtained. When both imaging and FNAC are inconclusive at that time surgical intervention becomes necessity in the form of excisional biopsy or the total parotidectomy. On histopathology tuberculosis features are the caseating

granulomas and staining of the acid-fast bacilli [7].

As per the treatment part four drug regimen consisting of rifampicin, isoniazid, ethambutol, and pyrazinamide in the intensive phase followed by the two-drug regimen consisting of rifampicin and isoniazid in the continuation phase is recommended [8]. However, a regimen constituting only the two druglike, rifampicin and isoniazid may also be sufficient in treating this condition as it is a paucibacillary extra pulmonary form of tuberculosis [6].

Conclusion

Although tuberculosis can infect any organ in the body, but the involvement of parotid is still rare however in the developing countries patients presenting with unilateral parotid region swelling should be suspected with tuberculosis and further investigated so that early diagnosis and management can be done. Timely medical management eliminates the need for any surgical intervention.

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