Primary Tuberculosis of pharynx-diagnostic difficulties, complications and treatment

Tika R. Adhikari[1], Rahmat Omar[2]

[1]*Department of Otorhinolaryngology, JDWNR Hospital, Thimphu, Bhutan*
[2]*Department of Otorhinolaryngology, University Malaya, Kuala Lumpur, Malaysia*

ABSTRACT

Primary tuberculosis of the upper respiratory tract is extremely rare and poses a diagnostic challenge. Due to delay in diagnosis the disease may progress to life threatening airway compromise. Here we report a case of chronic granulomatous infection of the upper respiratory tract involving the oropharynx. Initial biopsy revealed acute on chronic inflammation with no epitheloid granuloma and no acid fast bacilli was found on Ziehl-Nielsen staining of the biopsy. As a result of delay in diagnosis the disease progressed to involve the soft palate, valopharyngeal isthmus, and supraglottis compromising the airway and needed emergency tracheostomy. Where there is strong clinical suspicion repeat biopsy should be performed. The life threatening complication of pharyngeal tuberculosis such as stenosis and adhesion leading to airway compromise can occur during the course of treatment and should be closely monitored . It can be managed effectively with radiofrequency uvulopalatoplasty as demonstrated in the case report.

Keywords: Palatopharyngeal stenosis; Radiofrequency palatoplasty; Tuberculosis pharynx.

INTRODUCTION

Tuberculosis (TB) is a chronic granulomatous disease caused by acid fast Mycobacterium tuberculosis, and less commonly by Mycobacterium bovis and other atypical mycobacterium. Extra-pulmonary involvement of tuberculosis is rare, accounting for 10-15% of all cases. Of these, 1% involves the pharynx, in which patients may have co-existing primary lung lesion. Primary pharyngeal tuberculosis is extremely rare but when occurs can lead to life threatening airway compromise as in this case. The extra pulmonary sites which have been documented are in the tongue, oral cavity, lips, oropharynx, cheek, soft palate, uvula and larynx.

Extra pulmonary involvement of tuberculosis is usually encountered in an immunocompromised state, i.e., Human Immuno deficiency Virus (HIV)-infected individuals and post-renal transplant patients[1,2].

We report a case of a primary tuberculosis of pharynx in an immunocompetent patient which Progressed to involve the hypopharynx and supraglottic region leading to life threatening airway compromise requiring emergency tracheostomy and the management of the patient.

CASE REPORT

A 25 years old Indian female, presented to the Ear Nose and Throat (ENT) clinic with complaints of odynophagia and sore throat for one year duration. Initially, she noticed multiple small whitish lesions on the throat and soft palate when she looked into the mirror.

Patient denied any history of exposure to tuberculosis patient and does not have any high risk behavior for HIV infection.

She has been taking frequent oral medications from general practitioners and felt transiently better while on these medications. She has also been seen by the ophthalmologist for recurrent right-sided dacrocystitis which resolves with antibiotics.

General physical examination was normal except for mild dehydration. Oropharyngeal examination revealed granular lesions involving the uvula, soft palate and posterior pharyngeal wall (Figure 1).

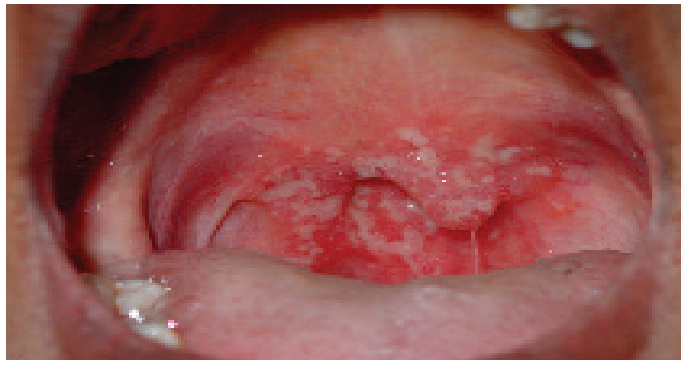

Figure 1. Initial Oropharyngeal examination on presentation revealed granular lesions involving the uvula, soft palate and posterior pharyngeal wall

Similar lesions were seen on nasopharyngeal examination. There was evidence of dacrocystitis of the right eye. Anterior rhinoscopy, indirect laryngoscopy and the rest of the ENT examinations were normal. Examination of the neck was also normal.

A clinical diagnosis of infected chronic granular pharyngitis was made. She was admitted for rehydration and intravenous antibiotics. Her symptoms improved dramatically, but the granular whitish lesions persisted on the subsequent follow up after a week.

Corresponding author:
Tika R. Adhikari
tikaram78@gamil.com

Hematological and biochemical results were within the reference range except for an increased erythrocyte sedimentation rate (ESR), which was 38 mm in the first hour. Chest X-ray finding was normal. Veneral disease research laboratory (VDRL) and enzyme linked immunosorbant assay (ELISA) screening test for HIV were negative. Blood was sent for cytoplasmic antinuclear antibody (C-ANCA) to rule out Wegener's disease, which was also negative.

Punch biopsies from the lesions was sent for culture and histopathological examination.

Culture grew Candida albicans. No acid fast bacilli were seen. Histopathology showed acute on chronic inflammation without any epithelioid granuloma seen.

She was treated with fluconazole tablet for 2 weeks. However, on subsequent follow up two weeks later she developed hoarseness and stridor, besides the worsening odynophagia. Repeat examination showed the initial oropharyngeal granular whitish lesion has extended inferiorly toinvolve the supragolottis. Fibreoptic nasopharyngolaryngoscopy revealed lesions involving right inferior meatus, nasopharynx, pharynx, hypopharynx and supraglottic regions with narrowing of the glottic inlet. The vocal cords were spared from the lesion.

An emergency tracheostomy was done under local anaesthesia, followed by suspension laryngosocpy and the lesions biopsied. Histopathology showed epithelioid granuloma with occasional giant cells. Ziehl-Nielsen staining did not show any acid fast bacilli and fungal stain was also negative. Mantoux test was strongly positive upon reading after 72 hours.

She was then started on standard antituberculous treatment regeime based on the histopathology report. Lesions disappeared within 3 months of commencement of treatment, and her general condition improved with a good weight gain. Oropharyngeal examination showed scarring of the palate with palatopharyngeal stenosis secondary to healing by fibrosis (Figure 2) and laryngeal examination showed the granuloma has healed.

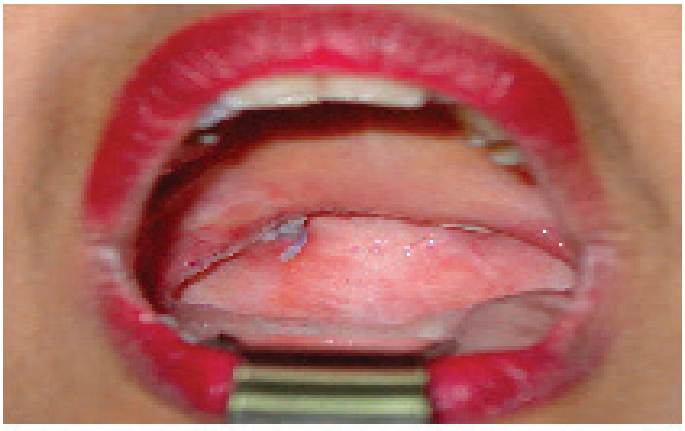

Figure 2. Oropharyngeal examination 3 months after starting antitubercular treatment showed scarring of the palate with palatopharyngeal stenosis secondary to healing by fibrosis

Radiofrequency palatoplasty was performed to release the narrowing 8 months post commencement of antituberculous treatment and following which she was decannulated successfully on the same day. FFPF EMC bipolar radiosurgical device with needle electrode was used and parameter set at 5W cutting and coagulation mode. Homeostasis was excellent with precise cutting margins achieved Post-operatively was uneventful and on follow-up two weeks later the uvulopalatoplasty was found to have healed well with a good palatopharyngeal patency (Figure 3).

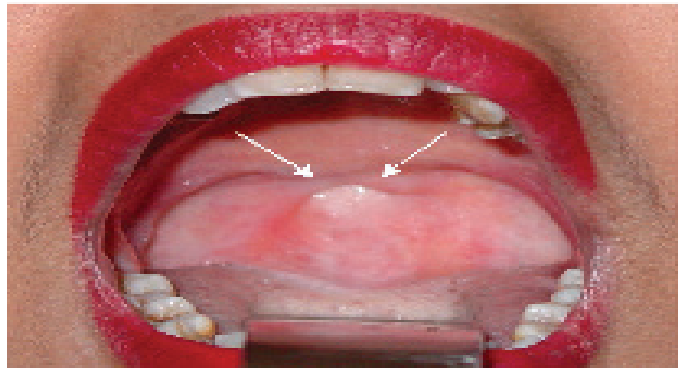

Figure 3. Good palatopharyngeal patency two weeks following radiofrequency palatoplasty

DISCUSSION

Tuberculosis of the oropharnx is extremely rare but when occurs can lead to life threatening airway compromice requiring emergency tracheostomy[3]. These lesions can be primary or secondary to pulmonary TB. Secondary TB is more commonly seen in the elderly, while primary extra pulmonary TB is seen in younger individuals and is rare. The differential diagnosis in chronic granulomatous lesion of pharynx includes tuberculosis, syphilis, fungal infections, leprosy and Wegener's granulomatosis[4]. The diagnosis is usually confirmed by biopsies. In the case of primary tuberculosis of pharynx, it is postulated that the mycobacterium is inoculated directly into the breached mucosa, which may be a result of trauma or any inflammatory conditions of the mucous membrane[5]. It is often difficult to make a diagnosis of primary tuberculosis. Bath et al. suggested that a diagnosis of TB should always be considered when the histological appearance suggests granulomatous disease[6]. The Zeihl- Nielsen stain and culture was negative for tuberculosis. Waldman et al. also found that tissue culture rarely shows growth of Mycobacterium tuberculosis[7].

Since primary tuberculosis of pharynx is a rare entity, it is difficult to make a clinical diagnosis clinically. The disease may remain undiagnosed for long time causing spread of infection and complications. Even the laboratory tests are not good enough and can mislead to diagnosis. The chest x ray may be normal. It is difficult to obtain acid fast bacilli from the biopsy sample. Even the biopsy sample in our case did not yield granuloma, the only clue tothe diagnosis of primary pharyngeal tuberculosis. The patient was misdiagnosed as fungal infection as the culture

suggested a fungal lesion and treated with antifungal. The patient didnot respond to treatment and landed up with complication of airway compromise requiring tracheostomy. Thus failure to diagnose early can result in spread of infection causing airway compromise and stridor. Only on subsequent second biopsy we were able to get granulomatous lesion with epitheloid cells and multinucleated giant cells. A diagnosis of primary tuberculosis of pharynx was made and antitubercular treatment started.

The treatment of primary tuberculosis of pharynx does not end with giving antitubercular treatment. Healing of the lesion results in scarring and endangers airway. Regular follow up is necessary to detect the complication. Palatophayngeal stenosis due to scarring can occur.

Release of such scar tissue becomes necessary once the medical treatment is completed with antitubercular drug and disease is rendered inactive.

In a series of 22 patients of laryngeal tuberculosis by Shin et al., one of them presented with stridor and was subjected to emergency tracheostomy and decannulated 3 weeks after commencement of antituberculous treatment[8]. In our case, the tracheostomy was performed for the same reason but decanulation was only done 8 months later, after release of the palatopharyngeal stenosis as the degree of adhesion is severe and would compromise natural nasal breathing.

The early diagnosis and prompt treatment for primary tuberculosis of pharynx is important in maintenance of airway patency. In clinically suspected cases further diagnostic evaluation like re biopsy needs to be done. The complication of pharyngeal tuberculosis such as stenosis and adhesion can occur during the course of antitubercular treatment and needs to be closely monitored even during the treatment. It can be managed effectively with radiofrequency uvulopalatoplasty after antitubercular treatment is completed and disease is rendered inactive as demonstrated in the case report.

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