Primary Tuberculosis in Soft Palate: Case Report of a Rare Entity

Paromita Ray, Atish Halder, Joyeeta Chowdhury¹, Alok K Roy¹
From the Department of ENT, CNMC, Kolkata, ¹Department of Dermatology, NRS Medical College, Kolkata, India

Abstract
A 40-year-old male patient presented to our clinic with history of dysphagia and ulceration in the palate for two months. After history-taking and thorough clinical examination, investigations like routine blood parameters, chest skiagram, sputum for acid-fast bacilli, ultrasonography of the abdomen, and biopsy from the palatal lesion were performed. No evidence in support of pulmonary or abdominal tuberculosis was found. Histopathological examination of the biopsy revealed granulomatous inflammation with Langhans giant cells and caseation necrosis. Diagnosis of primary tuberculosis of soft palate was made. Anti-tubercular regimen (CAT I) for 6 months was prescribed, and we got a dramatic response noted within 15 days. As isolated tuberculosis of soft palate is a very rare entity, one should, therefore, consider it in any case of chronic ulcer of the soft palate. Response to CAT I was excellent in our case.

Key Words: Granuloma, primary tuberculosis, soft palate

Introduction
Tuberculosis, one of the oldest diseases known to affect human being, is caused by bacteria belonging to the Mycobacterium tuberculosis complex. Transmission usually takes place through airborne spread of droplet nuclei produced by patients with infectious pulmonary tuberculosis. Oral mucosa is a rare location for tubercular infection, and it may either be primary or more often secondary infection. The incidence of oral TB is 0.5-5% percent of total TB cases.¹² Its incidence in underdeveloped countries is increasing.³ Different areas of oral cavity like floor of mouth, soft palate, gingiva, lips, hard palate can be involved; however, hard palate and tongue are the commonest sites of involvement for oral tuberculosis.

Case Report
A 40-year-old male patient presented to our outpatient department because of difficulty in swallowing solid food for two months. He had a burning sensation during deglutition, which increased gradually. This patient also complained of a painless ulceration in his soft palate, malaise, and weight loss since last two months. There is no history of rise of temperature, cough, hemoptysis, hoarseness of voice, regurgitation of food.

Clinical examination revealed an irregular area of 3 × 2 centimeters over the soft palate and uvula. The surface of the ulcer was reddish in color. Hard palate, tonsil, tongue, pharynx were within normal limit [Figure 1]. The regional cervical group of lymph nodes was not palpable when the patient presented to us. On palpation, ulcer had an indurated base with undermined margin. Hard palate, tonsil, tongue, pharynx were within normal limit. Upper respiratory tract including nose, larynx, and vocal cords were normal.

Erythrocyte sedimentation rate was raised (77 mm/hour). He was seronegative for both HIV 1, 2 and VDRL. Three subsequent sputum smears were negative for acid-fast bacilli. Chest radiograph was non-contributory. Mantoux test was strongly positive with induration of 14 × 18 mm. Nasal endoscopy, fiberoptic laryngoscopy, barium swallow X-ray of esophagus, and x-ray paranasal sinus (Water’s view) were within normal limit.

Punch biopsy was taken from the ulcerated lesions over the soft palate under topical anesthesia; bleeding controlled by application of local pressure. Histopathological examination of the tissue revealed presence of epithelioid cells, mononuclear inflammatory cells, Langhans type of giant cells forming granulomas with focal caseous necrosis [Figure 2]. Staining for acid-fast bacillus was negative. The diagnosis for TB soft palate was made.

In accordance with the existing guidelines, the patient was administered anti-tubercular medication (CAT I four drugs for two months followed by two drugs for four months). He responded well to the treatment [Figure 3]. His difficulty in swallowing reduced rapidly; his ulceration regressed within one and half months of chemotherapy.

Discussion
Although tuberculosis has definite affinity for lungs, it can affect any part of body including oral cavity. Oral manifestation of TB is usually seen secondary to infection of other parts of

Address for correspondence: Dr. Aloke Roy, Publisher and Head of Department, Department of Dermatology, NRS Medical College, 138, AJC Bose Road, Kolkata, India. E-mail: dralok1935@gmail.com

Access this article online

Quick Response Code: Website: www.e-ijd.org

DOI: 10.4103/0019-5154.135543
body. Tuberculous involvement of the oral cavity is extremely rare, with incidence ranging from 0.5-5%.\textsuperscript{1,2} Tuberculosis is a major public health problem in India. India accounts for one-fifth of global TB incident cases. Age has been implicated as different risk factor. Mortality rate varies with age and more so in developed countries.\textsuperscript{6} Poorer population are more susceptible to TB.\textsuperscript{5} An intact and healthy mucosa seems to provide a sufficient barrier to mycobacteria, with saliva also helping to control the organisms.\textsuperscript{6} Although oral tuberculosis has been well-documented, tuberculous lesions of the upper aerodigestive tract have become rare.\textsuperscript{7}

Oral tuberculosis most commonly results from contact of infected sputum with oral mucosa or hematogenous dissemination in an older individual with pulmonary disease.\textsuperscript{1} In contrast, cases of primary infection arising through direct mucosal invasion by mycobacteria are uncommon and typically are seen in young patients, who often present with cervical lymphadenopathy with or without cutaneous sinus formation.\textsuperscript{5} The sites demonstrating the most frequent involvement with primary tuberculosis are the gingivae, vestibular mucosa, and extraction sockets.

Mucosal lacerations and dental extractions have been implicated as predisposing an individual to the development of oral tuberculosis.\textsuperscript{8} Traditionally, the diagnosis of tuberculosis has been made on the basis of clinical, radiographic findings, and sputum examination. The diagnosis of oro-facial tuberculosis can be quite challenging, mainly because of a lack of definite signs and symptoms. According to Pandit \textit{et al.}, (1995), when considering the overall prevalence of tuberculosis of Indian population, the presence of epithelioid cell granuloma is indicative of disease unless proven otherwise.

Dimitrakopoulos \textit{et al.} (1991) reported two cases of primary TB of the oral cavity where smears and culture for AFB, from the oral lesion and the sputum, were negative.\textsuperscript{9} They confirmed the diagnosis solely on the basis of history and histopathological examination, which only revealed giant cells and epithelioid cells.

Oral ulceration can be a manifestation of primary syphilis and fungal diseases, and non-infectious processes such as chronic trauma and squamous cell carcinoma.

Multinucleated giant cells of Langhans type are frequently seen in various granulomatous lesions such as tuberculosis, leprosy, syphilis, sarcoidosis, Crohn’s disease, eosinophilic granuloma, and certain fungal diseases.\textsuperscript{10} Sarcoidosis lacks caseous necrosis, acid-fast organisms. Lepromatous leprosy lesions are associated with the involvement of superficial nerves leading to anesthesia and paresthesia, which may cause unrealized trauma leading to ulcers and secondary infection.\textsuperscript{11} Histopathologically, sarcoid-like non-caseating granulomas are present.

Crohn’s disease manifests itself as granulomatous nodules and ulcers in the oral cavity along with associated gastrointestinal symptoms.

Fungal lesions such as histoplasmosis,blastomyosis, and coccidiomycosis should also be considered during diagnosis of an oral lesion.

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\includegraphics[width=\textwidth]{figure1.png}
\caption{Palatal ulcer before treatment}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Granulomatous inflammation pattern on histology (H and E, \times 400)}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Healed ulcer}
\end{figure}
Microscopically, organisms can be identified with stains such as hematoxylin and eosin (H and E), Periodic acid-Schiff (PAS), or methenamine silver. Sporangia may be found free within necrotic tissue or within the epithelioid cells and giant cells of the granuloma. Fungal cultures can be an aid in identification of specific fungal species.\textsuperscript{10,11}

In our patient, we got epithelioid cell granuloma, also the giant cells and caseous necrosis in histopathologic examination; his Mantoux test elicited a strongly positive reaction with an induration of $14 \times 18$ mm after 72 hours, and patient was managed solely with anti-tubercular chemotherapy.

What is new?

Isolated palatal tuberculosis is a rare presentation. Clinical suspicion and histopathology helps in diagnosis. Oral tuberculosis should be considered in any chronic oral ulcer.

References