

Oral Tuberculosis In Disguise: Diagnostic Dilemma Of Gingival Enlargement

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Abstract: Background: Tuberculosis (TB) is a chronic specific granulomatous disease and a major cause of death in developing countries. The clinical presentation of TB lesions of the oral cavity varies widely and can manifest as ulcerations, diffuse inflammatory lesions, granulomas and fissures. We hereby report a case of primary TB of the gingiva manifesting as gingival enlargement. Diagnosis was based on histopathological examination, complete blood count, X-ray chest and Ultra sonography of neck, and Sputum AFB test. Anti-tuberculous therapy was carried out for over 6 months. This case report emphasizes the need for dentists to include TB in the differential diagnosis of various types of gingival enlargements. [Patel V Natl J Integr Res Med, 2026; 17(1): 41-45, Published on Dated: 07/07/2026]

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Introduction: Tuberculosis (TB) is a chronic granulomatous infectious disease caused primarily by *Mycobacterium tuberculosis*, and less commonly by *M. bovis* or atypical mycobacteria. It is a Gram-positive, acid-fast, aerobic bacillus first identified by Robert Koch in 1882¹. TB primarily affects the lungs, extrapulmonary involvement, including the oral cavity, is possible. Oral manifestations are rarely reported in 0.1% to 5% of TB cases and usually occur as secondary lesions from pulmonary spread².

Primary oral tuberculosis is rare, largely owing to the protective mechanisms of the oral environment, including the cleansing action of saliva, the sparse distribution of lymphoid tissue, and the antagonistic activity of resident commensal flora.

Disruption of the oral mucosal barrier commonly caused by tobacco use, ill-fitting dentures, or poor oral hygiene facilitates bacterial colonization and subsequent infection. Additionally, hematogenous dissemination plays a role in the pathogenesis of oral tuberculosis².

TB spreads via airborne droplets during coughing, sneezing, or speaking. Primary oral tuberculous lesions are dependent lymph nodes; the lesion itself remains painless in most cases, more

frequently seen in older adults (0.05–1.5% of cases). Common oral sites include gingiva, lips, soft palate, and alveolar mucosa. Lesions may appear as non-healing ulcers, mucosal patches, indurated masses, or bone involvement (tuberculous osteomyelitis)³.

Due to its high transmissibility, the National Tuberculosis Elimination Program (NTEP) recommends deferring elective dental treatment for active or suspected TB cases to protect healthcare providers⁴.

This is a case report of gingival tuberculosis which mimic the clinical and histological features of oral TB.

Case Report: A 18-year-old male presented to the Department of Oral Medicine and Radiology, with a chief complaint of swollen gums in the upper and lower front teeth regions for the past six months.

Additionally, he reported noticing redness in buccal mucosa, palate, tongue, and dry lips over the past two days, (Figure 1). Patient had no systemic history.

Clinical examination revealed reddish gingival enlargement covering two-thirds of the crown in the anterior labial region of both the jaws, with

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both inflammatory and fibrotic features. The gingiva was glistening, nodular, non-tender, and showed minimal bleeding. Differential diagnoses included inflammatory gingival enlargement, plasma cell gingivitis, drug-induced enlargement, vitamin deficiencies, and infections.

The patient was prescribed blood investigations, anti-allergic medication and was scheduled for follow-up. At the subsequent follow-up visit, blood investigations showed no abnormalities, and the redness of the gingiva had significantly reduced.

Then the patient was referred to the Department of Periodontology and Implantology with complaints of progressive, non-painful swelling in the upper and lower front tooth regions for the last six months.

On clinical examination, a diffuse gingival enlargement was noted in the maxillary and mandibular anterior teeth region, covering up to the middle third of the anterior teeth crowns. The color of gingiva was reddish; surface was pebbled with no ulcerations with a minimal tendency for bleeding.

On palpation, the enlargement was fibrous and was associated with pseudo pockets of 6-8 mm in depth. And gingiva in both the maxillary and mandibular regions showed minimal enlargement, consistent with local factors.

Common etiologies for gingival enlargement, such as inflammatory responses and other rare causes like bacterial, viral, and fungal infections, were included in the differential diagnosis.

Figure 1: Gingival Enlargement In Anterior Region Associated With Redness In Oral Cavity And Dry, Crusted Lips



To confirm diagnosis, a follow-up visit was scheduled after one week (Figure 2). An incisional biopsy was performed in the lower anterior region, which revealed a recurrence of gingival inflammation.

Figure 2: After 2 Days Follow-Up Redness Of Oral Cavity Was Reduced And Dryness Of Lips Was Normal Compared To 1st Visit



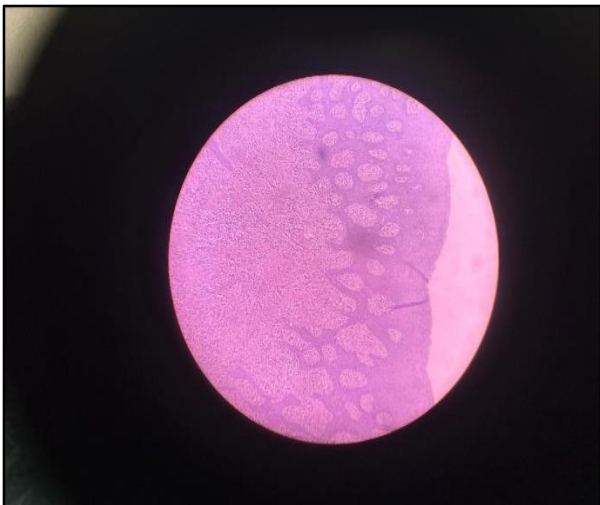
A specimen taken from the lower anterior region (Figure 3) was sent for histopathological examination, which showed granulomatous inflammation with Langhans-type multinucleated giant cells, suggestive of primary tubercular gingival enlargement (Figure 4).



Figure 3: A Specimen Taken From The Lower Anterior Region



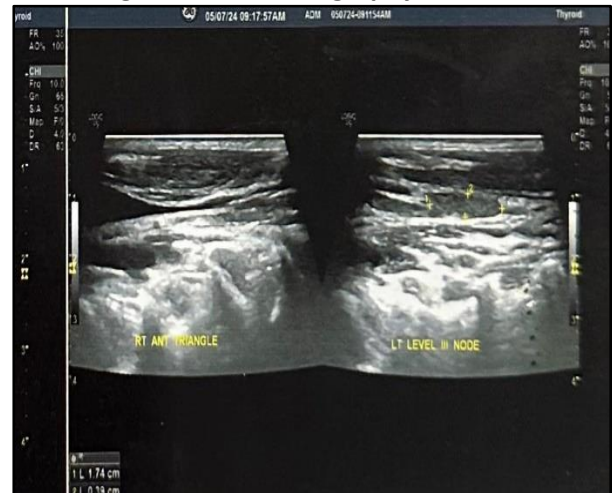
Figure 4: Shows Reoccurrence Of Upper Maxillary Gingival Enlargement, Specimen Of Lower Mandibular Gingivectomy, Histopathological Slide Of The Lesion.



To confirm diagnosis, clinically patient was suggested to repeat routine blood examination, chest x-ray, ultrasonography of neck and abdomen and AFB sputum examination.

Though all haematological parameters were within a normal range and chest radiograph did not show any significant changes but AFB sputum examination was positive and ultrasonography of neck showed Hypoechoic enlarged left Level III node is seen measuring 17.4×4mm. which suggest non-specific solitary cervical node enlargement. (Figure 5).

Figure 5: Ultrasonography Of Neck



The physician diagnosed the lesion as primary tubercular gingival enlargement and prescribed anti-tubercular drug including Ethambutol Hydrochloride (800mg), Pyrazinamide (750mg), Isoniazid (300mg), Rifampicin(450mg) under NTEP guidelines for 6 months along with multivitamin tablets.

At the 2-month follow-up visit, the patient reported back, and on examination, the gingival enlargement in both the upper and lower regions had resolved. (Figure 6)

Figure 6: Intraoral Picture Of Oral Cavity After 6 Months Follow Up Reveal No Recurrence Of Lesion



Discussion: Tuberculosis (TB) remains the leading cause of death worldwide from a single infectious agent. Approximately 32% of the global population is infected, with an estimated 2 million deaths annually from this otherwise treatable disease⁵. In India, the average prevalence of all forms of TB is reported as 5.05 per 1000

population⁶. Although oral TB is documented, lesions in the upper aerodigestive tract are rare, causing intraoral TB to be frequently overlooked in differential diagnoses, resulting in delayed or missed treatment⁷.

Primary inoculation of tuberculous bacilli into the oral mucosa can occur through surface breaks or via hematogenous spread, where bacilli lodge in the submucosa and subsequently ulcerate the overlying mucosa⁸. TB is also highly prevalent among immunocompromised individuals, especially those with HIV, making TB-HIV coinfection a major public health concern⁷.

Oral TB ulcers usually present as painful, deep-seated lesions with undermined edges and a pale floor.

When the gingiva is involved, it appears as diffuse, hyperemic, nodular, or papillary proliferations, often associated with regional lymphadenopathy⁹.

The oral lesion in this case was diffuse gingival enlargement without any presentation of ulceration which is the most common clinical feature of tuberculosis in oral cavity⁸.

The cervical lymph nodes were palpable along with redness in oral cavity.

All differential diagnosis was put forward according to age of patient (i.e. Inflammatory, plasma cell gingivitis, vitamin C deficiency.)¹⁰ and accordingly treatment was given.

Haematological examination was carried out which was within normal limits. Subsequently, an ESR test was performed, as it is a non-specific marker commonly used to aid in the detection of various pathological conditions, including acute or chronic infections, systemic inflammatory disorders, and neoplastic diseases¹⁰.

As haematological reports within the normal range, a biopsy specimen was sent for histopathologic examination which showed hyperplastic squamous mucosa with replaced by dense chronic inflammation with many discrete granulomas composed of epithelioid histiocyte and occasional Langhan's type of multinucleated giant cell which is indicative oral tuberculosis; however, to further confirm the diagnosis, we performed an AFB sputum examination.

After which patient initially tested positive for sputum AFB (acid-fast bacilli) six months ago.

AFB sputum examination is a vital diagnostic tool in assessing systemic TB, especially in patients with oral lesions¹⁰. However, a follow-up sputum AFB test conducted after six months returned negative results.

Subsequently, the patient underwent scaling and root planing, and oral hygiene instruction were provided to ensure proper maintenance of oral health.

Conclusion: In conclusion, tuberculous infection of the gingiva is a relatively rare condition, with oral lesions typically occurring secondary to pulmonary TB.

Therefore, a comprehensive examination is essential to exclude other primary sites before classifying oral lesions as primary TB.

Gingival enlargement can be attributed to various medical condition and a dentist should take a proper medical history to correctly diagnose the underlying reason which can provide useful information to a physician for treating it.

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