



Primary Gingival Tuberculosis Diagnosis: A Difficult Endeavor

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ABSTRACT

Aim: To highlight the importance of considering tuberculosis in the differential diagnosis even in the absence of confirmation from several investigations and diagnostic aides.

Background: Tuberculosis is a common infectious granulomatous disease caused by various strains of mycobacteria. An oral lesion when seen in association with tuberculosis is very rare and in most cases is noticed secondary to pulmonary forms.

Case report: We report a case of primary gingival tuberculosis in 20-year-old female patient who presented with treatment resistant gingivitis. Patient had no evidence of disease elsewhere in the body and several diagnostic tests also failed to reveal the presence of the causative organism. Resolution of gingivitis was noted following a therapeutic trial of antitubercular drugs.

Conclusion: Therefore the importance of including tuberculosis in the differential diagnosis of inflammatory disorder of the gingiva is very essential in order to avoid one of the most lethal forms of infections often overlooked.

Clinical significance: It is essential to consider tuberculosis as one of the differential diagnosis in India even when several diagnostic tests are negative for tuberculosis.

Keywords: Tuberculosis, Gingiva, Granulomatous.

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BACKGROUND

Tuberculosis infects one third of the world population and has become a major public health problem worldwide.¹ In 1993, the World Health Organization has declared tuberculosis as a global emergency.² The widespread increase in incidence of disease has made it cautionary so that the diagnosis in any form is not unheeded. While the incidence of the disease has fallen, tuberculosis still remains

a universal health problem due to increase in its incidence as a result of its association with AIDS.¹ Involvement of oral cavity is seen in both primary and secondary forms, however they are uncommon.³ The purpose of this paper is to highlight and emphasise the necessity for considering gingival tuberculosis in the differential diagnosis of inflammatory gingival conditions. This will certainly aid in decreasing the mortality and morbidity rates among the affected individuals.

CASE REPORT

A 20-year-old female presented with a chief complaint of gingival bleeding from the past 1 month. There was no underlying systemic illness detected and the family history was unremarkable. On general examination the patient was poorly built with no significant extraoral findings. Oral examination revealed an erythematous marginal gingiva extending throughout the maxillary arch (Fig. 1) with evidence of bleeding even on slight provocation. Oral prophylaxis was performed and after 2 weeks patient returned back with no resolution of the condition. A range



Fig. 1: Erythematous areas of erosion affecting the maxillary attached gingiva

of differential diagnosis was considered for routine treatment resistant gingivitis *viz.* desquamative gingivitis, linear gingival erythema associated with HIV infection and granulomatous diseases like tuberculosis, sarcoidosis, wegeners granulomatosis and crohns disease. Routine hematological values were within normal limits. ELISA for HIV 1 and 2 was negative (0.26 OD ratios). Patient had no demonstrable abnormalities on chest radiograph and the SACE (Serum angiotensin converting enzyme) values were within normal levels (67 microns / ml). An incisional biopsy was performed which revealed granulomatous areas with evidence of foreign body giant cells and few langhans cells indicating the presence of granulomatous lesion (Fig. 2). A series of diagnostic tests were performed to detect acid fast bacilli (AFB) which showed negative results – nested PCR which detects the MPB 64 gene, AFB staining and Mantoux test. The strong suspicion of tuberculosis still prevailed and with the general physician's advice a 6 months anti-tuberculosis therapy (ATT) regimen was initiated. The Initial phase, i.e. first 2 months (thrice weekly) comprised of isoniazid 600 mg, rifampicin 450 mg and pyrazinamide 1500 mg. The continuation phase was 4 months (thrice weekly) with isoniazid-600 mg and rifampicin 450 mg. Remarkably there was resolution of the gingival lesions following this therapeutic regimen (Fig. 3). During the treatment phase patient was very closely monitored and there were no obvious side effects to ATT.

DISCUSSION

The incidence of primary tuberculosis in the oral cavity is a rare.⁴ Tuberculosis has become a global health problem accounting for being the leading cause of death among individuals above 5 years of age. Moreover, the overall population being affected is about 8 million every year and

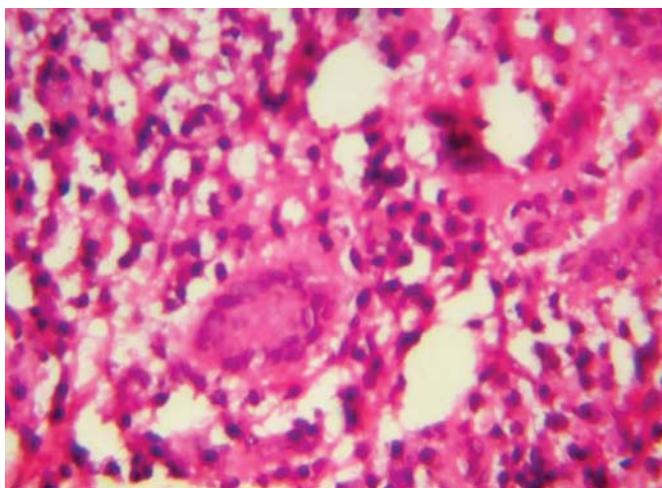


Fig. 2: Histopathology shows granulomatous areas with the presence of langhans type of giant cells (hematoxylin and eosin staining, original magnification, 40x)



Fig. 3: The resolution of gingival lesion following antitubercular therapy

approximately about 3 million people succumb to the complications associated with the disease.⁵ The prevalence of oral lesion in tuberculosis patients is 0.8 to 3.5% and very rarely the oral lesions are identified before the detection of pulmonary tuberculosis.⁶ The predisposing factors in most developing countries are poverty, malnutrition, economic recession, poor oral hygiene, tooth extraction and lack of awareness among the affected individuals.^{7,8} The most common causative organism associated with tuberculosis of oropharynx, lungs and lymph nodes is *Mycobacteria tuberculosis* and less commonly *Mycobacteria bovis*.⁹ The primary form of oral tuberculosis is very rare; occurring mostly in young adults and it is usually painless causing caseation of the involved lymph nodes. In contrast, the secondary form occurs in slightly older individuals accounting for 0.5 to 1.5% of the cases.¹⁰ The most common site of involvement for primary oral tuberculosis is the tongue followed by lips, cheek, soft palate, uvula, gingiva and alveolar mucosa.¹⁰ The primary diagnostic challenges in most the cases are due to its numerous clinical presentations which may take forms of a granuloma, ulcer, erosions, patches, nodules, fissures, vesicles and plaques.^{9,10} The pathogenesis revolves around a presence of an intact mucosal epithelium coupled with inhibitory effects of saliva that resist penetration of bacilli by direct inoculation. On the contrary, even a small mucosal erosion or tear, presence of inflamed or injured tissue, underlying bone pathologies and an open extraction socket may harbor and favour the localization of the organism.^{7,9} Whenever, the gingival lesions present as erosions a range of differential diagnosis like linear gingival erythema, desquamative gingivitis and granulomatous lesions have to be considered. A biopsy is mandatory for diagnostic confirmation, but when the histopathological features become generalized to any other granulomatous lesion, a combination of smear, culture,

mantoux test and possibly PCR may lead to appropriate identification of the disease entity and management of the patient.³ Recommended treatment of tuberculosis includes 3 of the 4 antituberculosis agents (Rifampicin, ethambutol, pirazinamide and isoniazid) administered daily for 2 months (8 weeks) followed by a 4 months (16 weeks) continuation phase in which 2 drugs are administered daily, twice a week or thrice a week.⁵

The present case has presented with enthralling observations showing areas of gingival inflammation in a young female patient. The diagnosis of primary tuberculosis was very remote accounting for the negative results obtained with several investigations and diagnostic aides. However, histopathological findings did not give any scope to discount the presence of oral tuberculosis following which an anti-tubercular therapy was initiated.

CONCLUSION

These findings indicate that this deadly disease can assume various nonspecific clinical forms. Early suspicion and timely intervention of all these cases is very essential in order to obtain a favorable outcome. However, as dentists this condition will definitely pave way for an occupational risk through aerosol contamination which definitely invites utmost care in handling these patients with adequate safety measures.

CLINICAL SIGNIFICANCE

Inclusion of this entity as a differential diagnosis in mucosal lesions of oral cavity is very important in establishing prompt diagnosis even in the absence of evidence from several diagnostic tests and contributing in trivial ways to decline the rate of this universal emergency condition—primary oral tuberculosis.

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