Gingival Tuberculosis: A Rare Presentation

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ABSTRACT

Tuberculosis is a specific granulomatous infectious disease and a major cause of morbidity and mortality in the developing countries. Primary gingival tuberculosis is extremely rare and is often a forgotten entity. It usually manifests as an ulcer. Oral lesions usually appear as a secondary form of infection. We report a case of primary tuberculosis in a 22 year old female who presented to the dental out-patients department with complaints of diffuse gingival enlargement. The patient had no evidence of tuberculosis anywhere else in the body. The possibility of gingival enlargement due to drugs, leukemia, fungus and sarcoidosis was ruled out. Histopathology of the resected mass showed caseating epithelioid granulomas. Anti-tubercular therapy comprising of 4 drug regimen was administered. On follow up after 6 months, there was no recurrence of the disease. This case emphasizes the need for dental surgeons to include tuberculosis in the differential diagnosis of gingival enlargement for early detection of this highly infectious disease.

Keywords: *Gingiva, Tuberculosis, Histopathology.*

Introduction

Tuberculosis (TB) is a chronic granulomatous infectious disease caused by *Mycobacterium Tuberculosis* and is a major health problem in most developing countries. It can affect any part of the body including the oral cavity; though extra pulmonary oral tuberculosis is rare.¹ Oral tuberculosis accounts for only 0.05-1.5% of tuberculosis cases present with oral manifestations and is usually associated with foci of disease elsewhere in body along presence of enlarged, palpable cervical lymph nodes in most of the cases.² It can be primary or secondary. Primary oral tuberculous lesions are extremely rare and generally occur in young adults. It usually involves gingival and is associated with caseation of the dependent lymph nodes; the lesion itself remains painless in most cases.³ In contrast, secondary oral tuberculosis is common and is usually seen in older adults.⁴ The most commonly affected oral site is the tongue followed by palate, lips, buccal mucosa, gingiva and the frenulum.⁵ Tuberculous lesions may present as superficial ulcers, patches, indurated soft tissue lesions, or even lesions within the jaw in form of osteomyelitis.⁶⁻⁸

Although the incidence of disease is continuously decreasing, TB still remains a major health problem, especially in India. The purpose of this case report is to emphasize the importance of early diagnosis of primary TB of oral cavity and especially of the gingiva, which may be misdiagnosed, when oral lesions are not associated with any apparent systemic infection.

Case Summary

A 22 year old woman presented to the dental out patients department with progressive, diffuse, bulbous, generalised

painless swelling of the gingiva for 3 months. Her medical history revealed no systemic problems. There was no history of cough with expectoration, dental trauma or any surgery in the affected area. The patient was of good health with normal pulse rate and temperature. No significant cervical lymphadenopathy was noted. Other systemic examinations were normal. Chest radiograph revealed no abnormalities and sputum AFB stain was negative. Intraoral examination showed fair oral hygiene with generalised inflammatory gingival enlargement. The differential diagnosis included gingival enlargement due to drugs, infections (bacterial, fungal and viral) and leukemic malignancy. The possibility of drug induced enlargement was ruled out based on the medical history.

An incisional biopsy of the gingival swelling was performed. Grossly the excised mass was 2x2 mm in size, firm & greyish white in color. Histo-pathological examination revealed caseating epithelioid granulomas with chronic inflammatory cell infiltrate and numerous langhan's giant cells and epithelioid cells (Figures 1 and 2). AFB stain performed on incisional biopsy specimen was negative. Culture of sputum, obtained by forceful coughing, was negative for mycobacterium tuberculosis, but immunofluorescence study on auramine rhodamine stained smears showed 1+ positivity (Figure 3). An immunologic test to detect antibodies against *Mycobacterium* in the patient's serum (ELISA) was positive. Based on these findings, a final diagnosis of primary gingival tuberculosis was given. Anti-tubercular therapy were started and basic periodontal therapy, which included scaling and root canal therapy and oral hygiene were instituted. This resulted

Fig. 1: Microscopic examination revealed caseating epithelioid granulomas with chronic inflammatory cell infiltrate and numerous langhan's giant cells and epithelioid cells. Hematoxylin and Eosin x 10X.

Fig. 2: Sections shows langhan's giant cell, scattered epithelioid cells and numerous lymphocytes. Hematoxylin and Eosin x 40X.

Fig. 2: Sections shows langhan's giant cell, scattered epithelioid cells and numerous lymphocytes. Hematoxylin and Eosin x 40X.

in significant regression of the enlarged gingiva. After completion of therapy, gingivoplasty was performed to shape and contour the residual enlargement under universal aseptic conditions. No recurrence of the lesion was seen after 6 months of completion of therapy.

Discussion

Tuberculosis remains the leading cause of morbidity and mortality worldwide. Approximately 32.0% of the world's population is infected with tuberculosis and an estimated 2 million people die annually from this treatable disease.⁹ In the Indian population, the average prevalence of all forms of tuberculosis has been reported to be 5.05 per 1,000.⁶ The prevalence of smear positive cases is 2.27 per 1,000 and the average annual incidence of smear positive cases is 84 per million.^[10] Although oral tuberculosis has been well documented, tuberculous lesions of the upper aerodigestive tract is rare. As a consequence, clinicians are not sensitized to the disease as part of a differential diagnosis, and there are undoubtedly patients in whom the correct diagnosis and therapy are delayed or missed entirely. The mechanism of primary inoculation into the oral mucous membrane is not clearly understood. One reason for the rare occurrence of tuberculosis of the gingiva may be that the intact squamous epithelium of the oral cavity resists direct penetration by bacilli.⁷ This resistance has been attributed to the thickness of the oral epithelium, the cleansing action of saliva, local pH and antibodies in saliva.^[1] Even if the onset of infection is by haematogenous spread, injured or inflamed tissue tends to localize blood borne bacteria. However, the mode of entry of the organism may be through a break in the mucous membrane caused by local trauma.^[11] Gingival enlargements which are not responding to usual anti-inflammatory treatment must be biopsied and if granulomas are seen, possibility of granulomatous lesions including primary oral tuberculosis must be considered. The different common oro-facial granulomatous conditions are traumatic ulcer, aphthous ulcer, syphilitic ulcer, actinomycotic and candida infections, Wegener's granulomatosis, Crohn's disease, sarcoidosis and leukemic malignancy. There was no history of trauma in our patient. Aphthous ulcer is an idiopathic recurrent multiple oval small ulcer with erythematous halo, but it rarely involves the gingiva. Periodic acid Schiff and Grocott's Gomori stain for bacteria and fungi were negative. Syphilitic ulcers usually present with concomitant genital ulcer and/or inguinal lymphadenopathy. Wegener granulomatosis was ruled out as no strawberry gingiva or any loose tooth was seen and other organ systems showed no abnormality. There was no history of irregular bowel habits and the tongue was normal, as seen in Crohn's disease. Sarcoidosis was ruled out as Kveim's siltzbach test was negative and

serum calcium with angiotensin converting enzyme level was not elevated. Malignant ulcer are of non- healing nature with induration and are seen most commonly on the tongue. As general blood picture was normal, so any haematological malignancy involving the was ruled out subsequently. Diagnosis of oral tuberculosis is difficult as the clinical presentation may take various forms and the typical constitutional features are absent in most cases. Gingival enlargement may be also be associated with diffuse enlargement of palatal mucosa, with fiery red to dull gingiva. The surface may be either irregular or pebbled with ulcerations and discharge on both gingival and palatal aspects, or rarely white granules may be seen on the swelling along with redness.^[12,13] Rarely multiple gingival ulcers is seen with a necrotic slough base and underlying bone destruction.^[14,15] In some unusual case it may present as rapidly extensive ulcer which extend deep to involve the underlying bone and soft tissue of pharynx.^[16]

Conclusions

Tuberculosis of the gingiva is relatively rare. Oral tubercular lesions are most commonly secondary to a primary foci. A thorough examination to rule out other primary sites should be attempted. With the recent increase in the incidence of tuberculosis, clinicians need to be aware of this possibility, consider tuberculosis in the differential diagnosis of gingival enlargement and thus, play a role in the early detection of this disease.

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