

Tuberculosis of Buccal Mucosa

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The incidence of tuberculosis (TBC) has been decreasing in industrialized countries since the Second World War because of the development of various chemotherapeutic agents, better nutrition, and environmental improvement.^{1,2} This has led to decreased diagnostic acumen among physicians in all fields. Almost half of the cases of TBC were misdiagnosed initially. However, TBC can be considered a reemerging infectious disease owing to a recent reversal in incidence.^{3,4} TBC has recently increased as a result of immigration trends, the increased aged population, the use of iatrogenic immunosuppression, and the impact of human immunodeficiency virus (HIV) disease.⁵⁻⁷ About 95% of the individuals exposed to *Mycobacterium tuberculosis* remain clinically asymptomatic, whereas 5% develop disease. The primary form of disease is often localized to the lungs. In most patients, the infection does not spread, and as host immunity develops, the caseous foci in the lungs and hilar lymph nodes undergo healing by fibrosis and, eventually, calcification. In a minority of patients, progressive pulmonary disease spreads to other organ systems through self-inoculation via infected sputum, blood, or the lymphatic system, establishing the secondary form of TBC.^{1,8} Oral TBC lesions are infrequent; it is estimated that only 0.05 to 5% of total TBC cases may present with oral manifestations, and involvement of the oral cavity is generally secondary to pulmonary TBC.^{1,8,9} Primary involvement is exceedingly rare.¹⁰⁻¹³ In primary oral TBC, the causative organism is directly inoculated in the oral mucosa of a person who has not acquired immunity to the disease.^{1,14} However,

Mycobacterium tuberculosis cannot invade the intact mucosa of oral cavity. The squamous epithelium is resistant to invasion to tubercle penetration. This has been attributed to the cleansing action of saliva¹⁵; the presence of salivary enzymes, tissue antibodies, and oral saprophytes; and the thickness of the protective epithelial covering. Any break or loss of this natural barrier, which may be the result of trauma, chronic irritation or inflammation, leukoplakia, tooth extraction, or poor oral hygiene, may provide a route of entry for the organism.¹⁶⁻¹⁸ The most common site of oral TBC is the tongue, but other oral sites may also be affected, such as the lips, cheek, soft palate, uvula, gingival and alveolar mucosa, and the floor of the mouth.^{1,3,8,9,11,16,19-25} Lesions may develop within the parotid glands.^{3,26,27} A correct differential diagnosis with other similar and more frequent lesions, especially carcinoma or different granulomatous diseases, is crucial.

The aim of this article is to report a case of a male who presented with a chronic ulceration affecting the buccal mucosa, which was ultimately found to be due to TBC.

Case Report

A 39-year-old man was referred to the Dental School of the University of Ancona complaining of a nonhealing, painful ulcer of the buccal mucosa. He had first noticed the lesion 2 months previously. Clinical examination showed that the lesion, 1.5 cm in diameter, was located on the right side of the buccal mucosa (Figure 1). It caused problems with chewing, so the patient was restricted to a soft diet. It was felt that there was a strong possibility that the lesion was malignant, possibly a squamous cell carcinoma, so an urgent incisional biopsy was performed under local anesthesia. No past history of TBC was reported. Histopathologic examination of the biopsy tissue showed a caseating granulomatous lesion. This raised the possibility of tuberculous infection. Histology of the tissue revealed the presence of a chronic granulomatous lesion consisting of multiple epithelioid granulomas (Figure 2) with minimal central necrosis (Figure 3) and rare Langerhans-type multinucleated giant cells—thus, features suggestive of tuberculous etiology. However, the research of Bacillus of Koch on

Received 05/11/04. Accepted for publication 05/26/04.

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Partially supported by the National Research Council (CNR), Rome, Italy; by the Ministry of Education, University and Research (MIUR), Rome, Italy; and by AROD (Research Association for Dentistry and Dermatology), Chieti, Italy.

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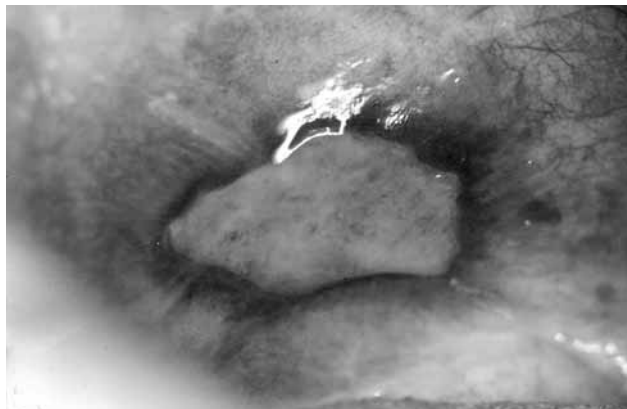


Figure 1 Clinical appearance of the ulcerated and depressed lesion located on the right side of buccal mucosa.

histologic slides was negative. All considered, we decided to perform a complete clinical examination, and the diagnosis of pulmonary TBC was confirmed by the culture of *Mycobacterium tuberculosis* samples. The patient was started on antituberculous treatment. The response was excellent, and the buccal mucosa lesion healed well. No recurrence was observed after a 3-year follow-up.

Discussion

Tuberculous lesions of the mouth may be either primary or secondary to pulmonary lesions. However, primary oral lesions are rare. In the present case, evidence of lung involvement was found, supporting the diagnosis of secondary oral TBC. A notable feature in this case was the location in the buccal mucosa, which, although previously reported, is rare. The review of oral TBC by Mignogna and colleagues did not identify any case of either primary or secondary TBC involving the buccal mucosa.⁹ The lesions of primary oral TBC, generally occurring in younger patients, are often associated with caseation of the regional lymph nodes and

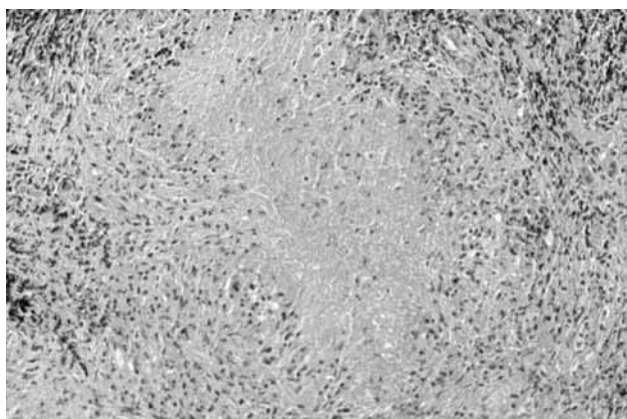


Figure 2 Epithelioid granuloma with rare peripheral Langhans-type multinucleated giant cells. Hematoxylin and eosin, $\times 200$.

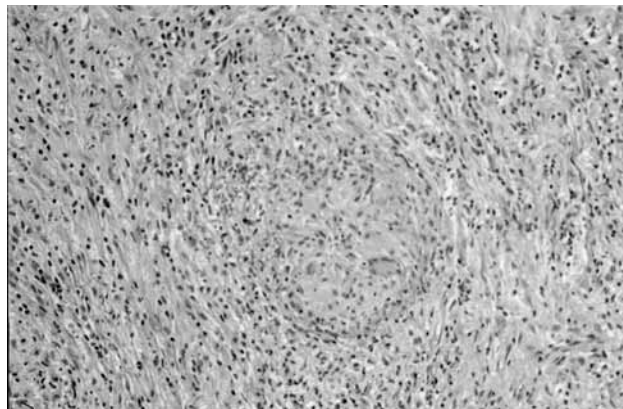


Figure 3 Centrally necrotic granuloma. Hematoxylin and eosin, $\times 160$.

remain painless in the majority of cases.^{1,11,14} On the other hand, secondary lesions are more common in older individuals and are usually a complication of pulmonary disease.¹¹ The usual tuberculous lesion is a chronic, irregular, superficial or deep, painful ulceration¹⁵ that tends to increase slowly in size; on the contrary, exophytic granular or nodular masses constitute a less common clinical presentation.^{1,9,13,14} The tuberculous lesion is frequently found in areas of trauma and may be mistaken clinically for a simple traumatic ulcer or even carcinoma. However, oral manifestations can include superficial ulcers, patches, indurated soft tissue lesions, chronic inflammatory parotid involvement, osteomyelitis, tooth mobility, and bone loss.²⁸ With the increasing incidence of TBC, the unusual forms of the disease in the oral cavity are more likely to be misdiagnosed. The clinicians should be aware of this possibility and consider TBC in the differential diagnosis of atypical lesions of the oral cavity, including those appearing as ulcerated and granular lesions in a buccal mucosa location. Differential diagnosis of a deep ulcerated lesion in a buccal mucosa location should include reactive and traumatic lesions, malignant tumours, especially squamous cell carcinoma, lymphoma, primary syphilis, deep fungal infections, and oral manifestations of systemic disease, such as sarcoidosis and Wegener's granulomatosis.^{1,4,11,16,21-23,29} Tuberculous lesions in the mouth do not differ microscopically from tuberculous lesions in other organs of the body.

The diagnosis of oral TBC can be challenging. The confirmation of the diagnosis of TBC is based on microscopic examination of the tissue and awaits positive results by culture,^{4,30} which, however, lacks sensitivity, presents technical difficulties, and may entail a wait of up to 4 to 6 weeks.^{9,14} The difficulties arise because mycobacteria are slow-growing organisms, and specimens are often inadequate.³¹ In suspected cases, granulation tissue should be examined for acid-fast bacilli and should be cultured specifically for *Mycobac-*

terium tuberculosis. A chest radiograph and Mantoux test, sputum cytology, sputum culture, and tissue biopsy should be considered to help establish the diagnosis.^{13,28–30} Once the diagnosis has been made, further complications are prevented by instituting antituberculous combination chemotherapy.³¹ Treatment consists of antituberculous chemotherapy for pulmonary disease. The treatment of oral TBC is secondary to treatment of the primary lesions.

Dentists should be aware of the possible occurrence of oral TBC lesions. TBC should always be considered as a possible cause of chronic oral ulceration.

In conclusion, TBC, although rare, should be considered in the differential diagnosis of suspicious oral ulcers, mostly because it is virtually a forgotten disease entity and may pose diagnostic problems.

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