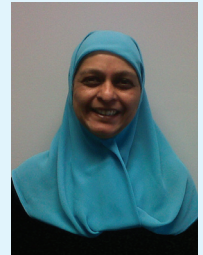


# Oral manifestations of Tuberculosis: The role of the dentist

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*December is Aids Awareness Month... TB is a frequent HIV co-infection. Dentistry can play an important role in managing these scourges.*



## INTRODUCTION

The recent announcement by the Minister of Health in the National Assembly on South Africa's position in fighting the spread of tuberculosis is welcomed by SADA. As oral health professionals we are in the forefront of diagnosing and assisting in preventing the spread of Tuberculosis.

Oral manifestations of tuberculosis have been considered to account for 0.1-5% of all TB infections. These lesions are usually secondarily inoculated with infected sputum or are due to haematogenous spread.

It won't be an exaggeration if it is said that dental identification of the tuberculosis lesions have the potential of serving as an important aid in the first line of control for this dangerous, and often fatal, disease.

## GLOBAL BURDEN OF TUBERCULOSIS

According the most recent report of WHO (2013), nearly 8.6 million people around the world became infected with TB disease. There were around 1.3 million TB-related deaths worldwide.

An estimated 1.1 million (13%) of the 8.6 million people who developed TB in 2012 were HIV-positive. About 75% of these cases were in the African Region.

HIV-1-associated TB is reaching epidemic proportions in many African countries. The prevalence and incidence of TB is similar in both HIV-positive and HIV-negative individuals, but the risk of active TB was elevated only for seropositive subjects. Increasing problems with TB may well continue because of the continuing emergence of MDR strains of M. TB, which is a major threat, particularly with HIV- and AIDS-infected patients, among whom mortality rates are high.

Saliva is considered to have a significant protective role which explains the paucity of oral lesions, despite the large numbers of bacilli present in sputum which are in contact with the oral mucosa in a typical case of pulmonary tuberculosis. Local factors that may facilitate the invasion of oral mucosa include poor oral hygiene, leukoplakia, local trauma, and irritation by clove chewing, etc. Self-inoculation

by the patient usually results from infected sputum or by haematogenous or lymphatic dissemination.

Conditions that predispose to the disease include crowded urban living, drug abuse, poor health and hygiene, poverty. Viral infections like HIV with or without the development of AIDS, cause immunosuppression which has lately emerged as a very significant risk factor for the development of TB.

## ORAL MANIFESTATIONS OF TUBERCULOSIS

Oral TB lesions may be either primary or secondary in occurrence. Primary lesions are uncommon, seen in younger patients, and present as single painless ulcer with regional lymph node enlargement. Primary oral TB can be present as painless ulcers of long duration with enlargement of the regional lymph nodes.

The secondary lesions are common, often associated with pulmonary disease, usually present as a single, indurated, irregular, painful ulcer covered by inflammatory exudates in patients of any age group but relatively more common in middle-aged and elderly patients.

Oral TB may occur at any location on the oral mucosa, but the tongue is most commonly affected. Other sites include the palate, lips, buccal mucosa, gingiva, palatine tonsil, and floor of the mouth. Salivary glands, tonsils, and uvula are also frequently involved. The oral lesions may be present in a variety of forms, such as ulcers, nodules, tuberculomas, and periapical granulomas.

The oral manifestations of TB can also be in the form of superficial ulcers, patches, indurated soft tissue lesions, or even lesions within the jaw that may be in the form of TB osteomyelitis or simple bony radiolucency.

Of all these oral lesions, the ulcerative form is the most common. It is often painful, with no caseation of the dependent lymph nodes.

Oral lesions of TB are nonspecific in their clinical presentation and often are overlooked in differential diagnosis, especially when oral lesions are present before systemic symptoms become apparent.

Primary gingival involvement is more common in children and adolescents than adults. It usually presents as a single painless indolent ulcer, which progressively extends from

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the gingival margin to the depths of the adjacent vestibule and is often associated with enlarged cervical lymph nodes. They may be single or multiple, painful or painless and usually appear as irregular, well-circumscribed ulcers with surrounding erythema without induration. Satellite lesions are commonly found.

When oral TB occurs as a primary lesion, an ulcer is the most common manifestation usually developing along the lateral margins of the tongue which rest against rough, sharp, or broken teeth or at the site of other irritants. Patients with oral tubercular lesions often have a history of pre-existing trauma. Any area of chronic irritation or inflammation may favour localization of the *Mycobacterium* associated with the disease.

Deep tubercular ulcers of the tongue are typical in appearance with a thick mucous material at the base. These tongue lesions are characterized by severe unremitting and progressive pain that profoundly interferes with proper nutrition and rest. Classically, tubercular ulcers of the tongue may involve the tip, lateral margins, dorsum, the midline, and base of the tongue. They are irregular, pale, and indolent with inverted margins and granulations on the floor with sloughing tissue.

With the increasing number of TB cases, unusual forms of the disease in the oral cavity are more likely to occur and be misdiagnosed. Although rare, dentists should be aware of the oral lesions of TB and consider them in the differential diagnosis of suspicious oral ulcers. TB of the oral cavity frequently simulates cancerous lesions and other problems such as traumatic ulcers, aphthous ulcers, actinomycosis, syphilitic ulcer, or Wegener's granuloma. The traumatic ulcer, which occurs in areas of chronic irritation from either sharp cusps or prosthesis, is acute in presentation and exquisitely tender. Also, the source of irritation is usually evident on examination. The chronic indurated ulcer has to be carefully distinguished from a carcinoma, for, as with other TB lesions of head and neck, they can resemble each other and frequently coexist.

The history reported by the patient and the clinical and radiological examination play an important part in the diagnosis of TB. However, laboratory confirmation and thorough histopathological examination is most essential for the diagnosis, with culture of microorganisms taken as the absolute proof of the disease.

## TREATMENT

The treatment of oral tuberculosis lesions is the same as the systemic tuberculosis. Currently, the most effective regimens require a combination of four drugs (isoniazid, rifampicin, pyrazinamide, and ethambutol) administered daily for the first two months, followed by an additional four months with only two drugs (isoniazid and rifampicin).

## PRECAUTIONS FOR DENTAL HEALTH CARE PROFESSIONAL

Clinical Dental Practice has a potential for transmission of various infections from patient to Dentist, patient to patient as well as Dentist to patient due to close proximity to the nasal and oral cavities of the patient.

Thus, a barrier should be created to prevent the transmission of infections and to make the clinical procedures safe from the threat of cross infections.

A detailed history of TB should prompt the dental practitioner to discern whether the person is an active case under treatment, active case without treatment or previously infected but currently disease free. The non-treated active cases pose maximum risk to the dental healthcare personnel.

Dental healthcare professionals are at the constant risk of being exposed to TB by means of splatter, aerosols or infected blood. Dental treatment for those with active tuberculosis should be limited to urgent and essential procedures.

As numerous serious diseases are air-borne, blood-borne or can spread through the contact of other body fluids, and it is impossible to know which certain patients are infected, it is pertinent to avoid direct contact with blood, body fluids and mucous membranes. High standards of operator disinfection and instrument sterilization should be maintained.

Rubber dams can be used to minimize aerosol contact however, if coughing is evident, rubber dam should not be used.

Maintenance of proper hand hygiene, personal protective equipment (eye shields, face masks, headcaps, gloves and surgical gowns) and proper sterilization procedures should be followed. Standard surgical face masks do not protect against TB transmission; dental healthcare personnel should use particulate face masks. Masks should be changed at regular intervals, inter-appointments (between patients) and intra-appointments (during patient treatment) if the mask becomes wet.

Reusable facial protective equipment (protective eyewear or face shields) should be cleaned and disinfected between patients. Handpieces and other oral instruments should be cleaned and autoclaved regularly.

The goal of the dental infection-control program is to provide a safe working environment that reduces the risk of both healthcare-associated infections among patients and occupational exposures among dental team members.

## CONCLUSION

Intercepting the disease early will increase the morbidity and mortality of the patients.

It becomes the duty of the dentist to include tuberculosis in differential diagnosis of suspicious oral lesions to avoid needless delay in the treatment of this disease.



## Holiday Season Salutations

Good wishes to all our readers.  
May this be a time of great happiness  
and relaxation. And may 2016 bring  
new opportunities and joy.

- Team SADJ

