

Tuberculosis of the tongue mimicking malignancy: A rare case report

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Introduction: Tuberculosis is a chronic infectious granulomatous disease caused by *Mycobacterium tuberculosis*. Extrapulmonary tuberculosis is rare and accounts for 10–15% of all tuberculosis cases, the involvement of oral cavity accounts for 0.05–5% of total cases of tuberculosis. The rarity of tuberculosis to affect tongue is multifactorial. **Case Report:** A 45-year-old male presented with a chief complaint of non-healing ulcer over the left lateral aspect of the tongue for the last 3 months. On examination, 2 × 3 cm irregular ulcer present on the left lateral aspect of the tongue. Histopathological examination showed the presence of acid-fast bacilli on Ziehl–Neelsen staining for tuberculosis, and cartridge-based nucleotide acid amplification test (CBNAAT) was positive for tubercle bacilli. **Discussion:** Tuberculosis involving oral cavity is usually secondary to pulmonary tuberculosis and is often undiagnosed, whereas primary tuberculosis of the tongue is extremely rare and generally occurs following a breach in the oral mucosa due to various reasons. CBNAAT is another newer modality of diagnosing tuberculosis from tissue samples apart from Ziehl–Neelsen staining and histopathology. **Conclusion:** Ulcer of tubercular origin should be in the differential diagnosis of non-healing ulcers of oral cavity. CBNAAT is also emerging as the latest diagnostic modality which is efficient, fast with good yield.

KEY WORDS: Cartridge-based nucleotide acid amplification test, histopathology, *Mycobacterium tuberculosis*, Ziehl–Neelsen staining


INTRODUCTION

Tuberculosis is one of the most common chronic infectious granulomatous disease usually caused by *Mycobacterium tuberculosis* and less commonly by *Mycobacterium bovis* and seldom by other atypical mycobacteria. Extrapulmonary tuberculosis is rare accounting for 10–15% of all tuberculosis cases, the involvement of oral cavity accounts for 0.05–5% of total cases of tuberculosis.^[1] The tongue is the most commonly

affected site in oral cavity and accounts with incidence up to 0.1%, other sites which can be involved in oral cavity includes lips, cheek, soft palate, uvula, gingival, and alveolar masses.^[2]

Tuberculosis of tongue is rare, but it usually presents as superficial ulcers, patches with or papillomatous lesions, or with indurated soft-tissue lesions. The first case of lingual tuberculosis was in 1888.^[3]

There are multifactorial reasons as to why the tongue is rarely affected by tuberculosis. The probable reasons may be the thickness of its mucous membrane and marked resistance of striated muscle to bacterial invasion, the continuous movement of the tongue makes the bacteria unstable at a particular place, cleansing effect of saliva also protects the oral mucosa, presence of saprophytes, and the submucosal antibodies provide a natural barrier. Some has also proposed that the tongue has a very less

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lymphoid tissue, and this tubercular bacillus has an affinity for it, thereby decreasing the chances of lodgment of tubercular bacilli in the tongue.^[4]

Break in the continuity of mucous membrane is generally necessary for the bacillus to gain entrance, and this could be after any history of trauma or tooth extraction, inflammatory conditions of oral cavity, and poor oral hygiene. Alternatively, the bacilli may access the tongue by bloodstream or by lymphatic extension a well-described pathogenesis of extrapulmonary tuberculosis.

Tongue tuberculosis is more commonly found in, and usual age of presentation is in the fourth decade of life. Although it can affect any part of the tongue, the lateral border and tip are more commonly involved. A single solitary ulcer is the most common presentation of tongue tuberculosis, another being fissure, tuberculoma, and diffuse glossitis or multiple ulcers and it the condition often mimics malignancy and is seen and investigated with a high rate of suspicion for malignancy. Histopathology plays a major role here and provides a definitive diagnosis.

CASE REPORT

A 45-year-old male farmer by occupation presented in the outpatient department of ENT at tertiary care teaching hospital with a chief complaint of non-healing ulcer over the left lateral aspect of the tongue for the last 3 months with accompanying complaint of difficulty in chewing and intolerance to spicy food. He had a positive history of smoking and chewing tobacco chewing for the last 20 years and was not associated with a history of cough, fever, or weight loss.

On examination, he was moderately built and well-nourished. Examination of the oral cavity showed poor oral hygiene with 2 × 3 cm irregular ulcer present on the left lateral aspect of tongue, the ulcer was non-tender, covered with slough with non-indurated margins, and pale granulations at margins [Figure 1]. On examination of the neck, the left submandibular lymph node was palpable, non-tender, soft inconsistency, and mobile. Overall from history, personal habits, and examination, malignancy of the tongue was suspected, and a punch biopsy under local anesthesia was taken and sent for histopathological examination (HPE).

HPE showed the presence of acid-fast bacilli on Ziehl–Neelsen staining for tuberculosis; the microscopic examination did not show the presence of any atypical cells [Figure 2].

The patient was now evaluated in line with tuberculosis. Hence, routine blood investigations were done along with a serological test for HIV, all these tests were normal, and HIV was non-reactive. The tissue was again taken from the ulcer from different sites, crushed in 5 ml of normal saline, allowed the sediment to settle for 5 min and the supernatant part was send for cartridge-based nucleotide acid amplification test (CBNAAT), which came out to be positive for tubercle bacilli. However, CBNAAT of sputum sample was negative, and the chest X-ray was normal. Thus, a diagnosis of primary tuberculosis of tongue



Figure 1: Ulcer present on the left lateral aspect of patients tongue (inset: magnified view of the ulcer)

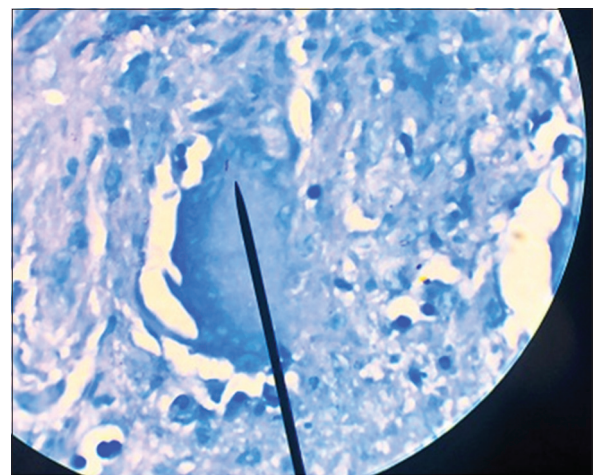


Figure 2: Microscopic figure showing the presence of acid-fast bacilli on Ziehl–Neelsen staining (the arrow is pointing)

was made. The patient was registered for tuberculosis treatment under the government.

DISCUSSION

Extrapulmonary tuberculosis is one of the rare conditions and seen in 10–15% of all tuberculosis cases. Tuberculosis involving the oral cavity is further rare, and tongue involvement though a common site in oral cavity constitutes a very less percentage in the overall incidence of tuberculosis.^[1]

Tuberculosis of oral cavity is rare, and it is usually secondary to pulmonary tuberculosis, where due to repeated cough with sputum causes excessive bathing of oral cavity and results in increases bacterial load in oral cavity. Other modes of spread can be hematogenous and lymphatics as well. However, there may be a lower rate of reporting of lingual tuberculosis which is secondary to pulmonary tuberculosis, this is because the major concern is given to the pulmonary component and oral lesion if present is not given importance, and both respond to common anti-tubercular treatment.

It is rare to find primary tuberculosis of the tongue, and it generally occurs as a result of a breach in the oral mucosa due to chronic tobacco abuse, ill-fitting denture, sharp tooth, following extraction of a tooth, and poor oral hygiene. This is proposed because the stratified squamous epithelium of tongue and striated muscle is normally resistant to tubercular invasion along with the continuous movement of the tongue does not allow the bacilli to stagnate at a point.^[4]

The pattern of presentation of tuberculosis of tongue is varied and ranges from a non-healing ulcer to macroglossia and following are the description of five pathological types of lesion proposed by aird:^[5]

1. Tubercular ulcer: It usually starts with a small tubercle which gradually becomes soft and after denudation leaves shallow, ovoid ulcer which is painful with pale granulation tissue and undermined margins
2. Tuberculoma: Usual presentation is as a lump and can involve any part of the tongue as gumma, and gradually, it softens to form an ulcer
3. Tuberculous fissure: It generally involves on the lateral part of the tongue and is well appreciated by separating their edges
4. Tubercle papilloma: It is due to the overgrowth from the margins of fissure
5. Tubercular cold abscess: It results due to a breakdown of tuberculoma.

To diagnose oral tuberculosis, a tissue biopsy is mandatory. CBNAAT is another newer modality of diagnosing tuberculosis from tissue samples. As per the World Health Organization guidelines for collecting a sample for CBNAAT, one should take the biopsy sample in 5 ml of normal saline and crush the tissue

and allow it to mix and leave the sample to settle down for 5 min, collect the supernatant, and send the sample for processing for CBNAAT. In the present case report, the diagnosis was further confirmed by sending the sample for CBNAAT also. Although sensitivity of CBNAAT for extrapulmonary tissue is less, in our case, both histopathology and CBNAAT were conclusive for tuberculosis.

CONCLUSION

Tuberculosis of the tongue though one of the rarest sites to be affected by tuberculosis but is the most common site of oral cavity. They usually present as a non-healing of the tongue and are wrongly diagnosed as an oral malignancy on clinical assessment and it is HPE and Ziehl–Neelsen staining which is the gold standard for the diagnosis of TB. CBNAAT is also emerging as the latest diagnostic modality which is efficient, fast with good yield.

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