

Primary Tuberculosis of the Pharynx in an HIV Context: A Case Report

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ABSTRACT: Pharyngeal tuberculosis without pulmonary involvement is very rare and may be confused with malignant lesions. We present a 45-year-old female patient with a history of HIV presenting with a history of cough, sore throat, and oral ulcers with chronic use of antibiotics. The evolution would indicate a probable malignant tumor, but the biopsy was consistent with Pharyngeal TB. The patient initiated anti-tuberculosis therapy and demonstrated improved conditions and remission of ulcers. In the context of HIV, this treatment could be a major contributor to the underdiagnosis of the disease and may lead to alternative diagnoses. Therefore, it is vital to consider this condition in patients who do not respond to antibiotics.

KEYWORDS: Pharyngeal diseases, tuberculosis, HIV, pharyngeal neoplasms

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Introduction

Tuberculosis (TB), caused by *Mycobacterium tuberculosis*, is one of the leading causes of mortality in the world.¹ The incidence of this condition is impacted by malnutrition and diseases that affect the immune system, like those found in individuals with HIV.²

It predominantly affects the lungs, resulting in granulomas in 85% of cases. Nevertheless, extrapulmonary sites, including the oral cavity, can also be impacted in up to 5% of cases.³ This condition can affect 2 or more anatomical subsites, with the tongue being the most commonly affected, followed by the tonsils, soft palate, and pharynx. However, the individual occurrence in the pharynx is even rarer, with reported figures as low as 0.06%.^{4,5}

The clinical presentation of pharyngeal tuberculosis typically includes symptoms such as pain in the pharynx, difficulty swallowing, fever, and swollen lymph nodes. These symptoms can be easily mistaken for those of viral pharyngitis caused by rhinovirus, influenza, coronavirus, Epstein-Barr, and *Streptococcus pneumoniae*.^{6,7} Due to the patient's immunosuppressed state due to HIV, it is possible that he or she is underdiagnosed for other diseases or the development of neoplastic lesions.^{8,9} This could lead to disease progression and inappropriate treatment.

Because pharyngeal TB without pulmonary involvement is a rare condition, we present a case study of a woman diagnosed with HIV who presented with chronic cough and sore throat, which mimicked a neoplastic lesion in the pharynx.

Case Report

A 45-year-old lady from the coast of Peru with medical history of HIV since last 4 months and on regular ART treatment presented to our emergency department.

Four months prior to admission, the patient had experienced 5 days of sore throat with pain intensity of 3/10 and sporadic dry cough, so she self-medicated with amoxicillin/clavulanic acid and paracetamol for 20 days. After failing to exhibit any signs of improvement, the patient sought medical attention at a health center. There, the medical professional prescribed the same medication for an additional 7 days. However, the patient continued to experience symptoms such as febrile peaks, hyporexia, and progressive dyspnea, prompting her to seek further evaluation at the hospital. It was there that she was diagnosed with COVID-19 pneumonia and oral candidiasis, resulting in a 15-day hospitalization.

Two months prior to admission, the patient reported a recurrence of sore throat characterized by a pain intensity of 7/10, accompanied by odynophagia and fever spikes. Consequently, the patient self-administered amoxicillin/clavulanic acid for a period of 7 days.

One week prior to admission, the patient presented at our hospital's emergency department due to worsening symptoms. Upon admission, their vital functions were measured: blood pressure was 115/70 mmHg, heart rate was 110 bpm, respiratory rate was 22 rpm, and temperature was 38.4°C. During the physical examination, the presence of bilateral, painful, and mobile cervical lymphadenopathy was noted. Painful ulcerative



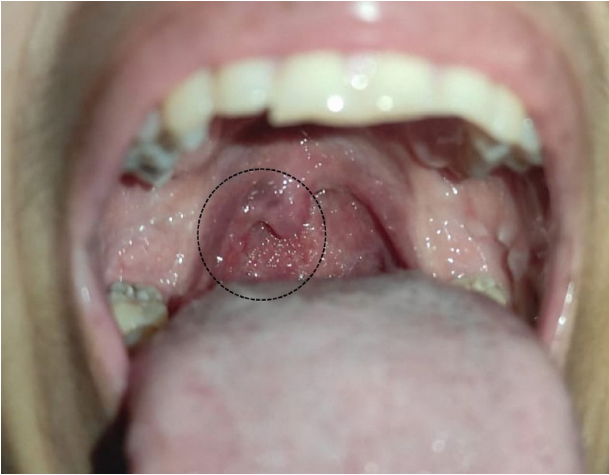


Figure 1. Showing a shortened uvula with posterior traction and an ulcerative lesion on the pharyngeal wall.

lesions with erythematous edges are evident in the pharynx, along with a shortened uvula with traction to the posterior region and no bleeding at the level of the palate (Figure 1). Chest and lungs: There were no added sounds in either lung field. Laboratory analysis revealed the following: hemoglobin at 9 (normal range: 12.5-16 g/dL), leukocyte count at 8210 (normal range: 4000-10 000 mm³), and eosinophil count at 142 (normal range: 0-500 mm³). CRP was 125 (normal range: 0-10 mg/dL) and CD4 count was at 420 mm³. Serological testing yielded negative results for HTLV, hepatitis B, and hepatitis C. The chest X-ray and tomography showed no abnormalities. Sputum smear tests and a Genxpert were conducted with negative results. Based on a possible diagnosis of neoplastic lesion, a biopsy was performed on the posterior pharyngeal wall. Results showed a suppurative tuberculoid granulomatous reaction and no presence of malignant neoplasia (Figure 2).

The patient began a sensitive regimen of isoniazid (INH), rifampicin (RIF), ethambutol (MEB), and pyrazinamide (PZA) and was discharged 7 days after being admitted to the hospital. After 15 days of treatment, the patient's odynophagia disappeared, and the pharyngeal ulcers were fully resolved. The patient did not encounter any further complications.

Discussion

Pharyngeal TB is a rare condition, but its occurrence has been decreasing as a result of successful treatment with antituberculous chemotherapy. Pharyngeal TB is typically linked with lung foci that have cavitated. This form of TB has a poor prognosis because it can spread hematogenously or due to an increase in bronchial secretions contaminated with the bacteria.^{1,10} Thus, isolated pharynx involvement is exceedingly uncommon.

The authors believe that chronic antibiotic use, which can affect the oral microbiota, is the main contributing factor to the development of primary pharyngeal TB.¹¹⁻¹³ In the

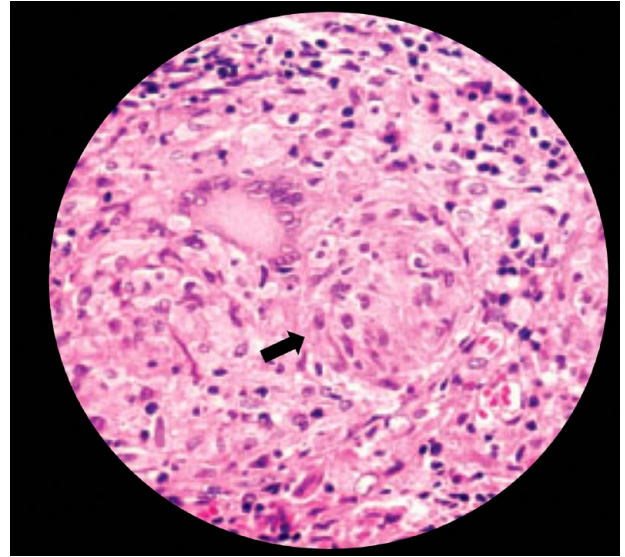


Figure 2. Microscopic appearance of the pharyngeal mucosa showing focal areas of epithelioid (arrow) with Langhans giant cells with punctiform necrosis. Hematoxylin and eosin staining $\times 400$.

context of HIV, the proposed mechanism suggests that a chronic pro-inflammatory state of lymphoid tissue, combined with inhaling droplets containing tuberculous *Mycobacterium* and the slowing of air with turbulent flow, contributes to the primary focus being in the pharynx.^{14,15} Other factors that restrict its occurrence only to the pharynx are related to immune status, including nutritional deficiencies or the use of inhaled corticosteroids.¹⁶

Once tuberculosis is situated in the pharynx, it can lead to the proliferation and inflammation of the mucosa resulting in persistent coughing accompanied by chronic pain. Additionally, cases of laryngeal paralysis and odynophagia have been reported.¹⁷ However, the patient's HIV-related immunosuppression, ulcers, weight loss, and oral candidiasis could have masked the diagnosis. As a result, other infections or malignant neoplasms, like Kaposi's sarcoma or pharyngeal carcinoma, were thought to be the primary diagnoses instead of suspecting pharyngeal TB.^{14,18} Therefore, an initial contrast-enhanced CT study would have been important to determine the possible presence of a neoplasm and to evaluate the extent of the lesion.¹⁹

The likelihood of a positive sputum smear in patients with pharyngeal tuberculosis is exceedingly low, with reports of up to 42.9%. In contrast, culture can yield results up to 84.6%, although it typically takes weeks to obtain them.²⁰ For this reason, a biopsy is the most crucial diagnostic tool.²¹ Histological microscopy findings typically display caseous necrosis, epithelioid granuloma cells, and Langhans giant cells encompassed by lymphocytes.²²

Conclusion

Our patient presented a case of primary pharyngeal TB, found incidentally during a biopsy. This rare condition is often

underdiagnosed in HIV-positive patients. Therefore, it should be considered as a possible diagnosis for ulcers and redness in the pharyngeal mucosa that do not respond to antibiotics.

Author Contribution

Cristian Morán-Mariños: Conceptualization; Methodology; Supervision; Writing—original draft; Writing—review and editing. Felix Llanos-Tejada: Validation; Writing—original draft; Writing—review and editing. Juan Salas-López: Writing—original draft; Writing—review and editing. Renzo Villanueva-Villegas: Validation; Writing—review and editing. Kenneth G. Vargas-Ponce: Validation; Writing—review and editing. All authors reviewed the paper and approved the final version of the manuscript.

Informed Consent

Written informed consent for publication of this case report was obtained from the patient.

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