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Tuberculosis, Larynx, Lung, Xpert MTB-Rif, Young man

**A Laryngeal Tuberculosis Revealing the Diagnosis
of Pulmonary Tuberculosis**

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Abstract

Tuberculosis remains a major public health concern in Morocco, with a high prevalence of extrapulmonary forms, particularly laryngeal tuberculosis among cervical localizations. Laryngeal involvement is often secondary to active pulmonary tuberculosis caused by bronchogenic spread of tuberculous bacilli, as observed in this case of a 42-year-old male patient, a chronic smoker, with no recent tuberculosis contact or associated medical history. Symptoms began gradually with dysphonia and high dysphagia, accompanied by a productive cough without significant systemic signs. Endoscopy revealed an ulcerated proliferative mass at the epiglottis, with biopsy showing an epithelioid granuloma without caseous necrosis. Chest X-ray revealed a left cavitary lesion, and sputum GeneXpert testing was positive, confirming drug-sensitive pulmonary tuberculosis. The final diagnosis was drug-sensitive laryngeal and pulmonary tuberculosis, treated with antitubercular therapy with good clinical outcomes. This case highlights the importance of early diagnosis and integrated management of laryngeal and pulmonary tuberculosis to improve prognosis and prevent complications.

Introduction

Tuberculosis remains a major public health issue in Morocco, despite significant progress made under the National Tuberculosis Control Program [1]. Among extrapulmonary forms, laryngeal tuberculosis holds a particular place due to its relative rarity and often misleading clinical manifestations [2]. This form of tuberculosis affects the larynx and can mimic conditions such as malignant tumors or chronic laryngitis, delaying diagnosis and treatment [3]. The association between laryngeal and pulmonary tuberculosis is relatively common, with the former often secondary to active pulmonary involvement [4]. This relationship is explained by the direct spread of tuberculous bacilli from pulmonary lesions to the larynx, mainly via the bronchogenic route [3]. Clinically, this association presents with varied symptoms, including persistent cough, dysphonia, odynophagia, and sometimes dyspnea. These signs may mimic other conditions, particularly malignant tumors, complicating early diagnosis [3]. The aim of this report is to present the case of a patient diagnosed with laryngeal tuberculosis associated with pulmonary tuberculosis.

Case Report

This is a 42-year-old male patient, a chronic smoker who has not ceased smoking. The patient reported no recent contact with tuberculosis in his surroundings and had no associated medical conditions. The onset of his illness dated back three months, with the gradual development of dysphonia and progressive high dysphagia, accompanied by a productive cough with whitish secretions. There was no dyspnea, hemoptysis, chest pain, or other associated extrapulmonary signs. The symptoms evolved in an afebrile context, without night sweats, but with mild general fatigue, anorexia, and unquantified weight loss. The patient consulted an otorhinolaryngologist, who ordered a cervical

CT scan revealing edema and thickening of the supraglottic region of the larynx, associated with bilateral necrotic cervical lymphadenopathy, each measuring less than one centimeter (Fig.1). Laryngoscopy revealed an ulcerated, friable, and bleeding mass affecting both sides of the epiglottis, extending laterally to the region of the three folds and posteriorly to the arytenoid. Biopsies were performed on the right arytenoid and epiglottis, showing epithelioid granulomatous sinusitis without caseous necrosis, suggestive of either tuberculosis or sarcoidosis.

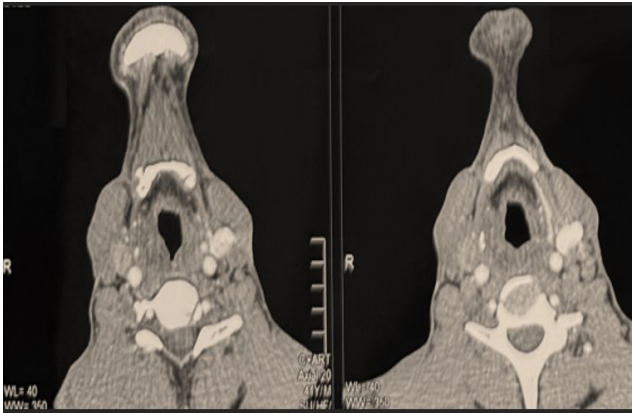


Figure 1: Cervical CT scan showing edematous thickening of the supraglottic region of the larynx.

The patient was referred to a pulmonologist for further investigation. A chest X-ray revealed a left apical cavitory lesion associated with multiple bilateral reticular infiltrates predominantly on the right side (Fig.2). GeneXpert testing of bronchial sputum was positive, with no resistance detected, confirming the diagnosis of drug-sensitive pulmonary tuberculosis.



Figure 2: Chest X-ray showing a left apical cavitory lesion associated with multiple bilateral reticular infiltrates, predominantly in the upper regions and on the right side.

In conclusion, the final diagnosis was drug-sensitive laryngeal and pulmonary tuberculosis. The patient received a six-month antitubercular treatment regimen with favorable clinical evolution, marked by the resolution of dysphonia, dysphagia, bronchial symptoms, and complete



Figure 3: Chest X-ray showing complete radiological clearance after antitubercular treatment.

Discussion

Laryngeal tuberculosis is encountered by otorhinolaryngologists and pulmonologists [5]. Accurately estimating the current prevalence of laryngeal tuberculosis in patients with pulmonary tuberculosis remains challenging, as it is often underdiagnosed [3]. Laryngeal tuberculosis is more common in male smokers [6], and our case aligns with this finding [7]. Smoking may be a risk factor for the development of more extensive lesions in patients with laryngeal tuberculosis [6]. The primary symptom of laryngeal tuberculosis is hoarseness, followed by sore throat and odynophagia, explained by the frequent involvement of the supraglottic larynx. However, in our patient, dysphonia and dysphagia resulted from subglottic laryngeal involvement [3]. Diagnosis relies on microbiological and histological results from laryngeal biopsy samples. The gold standard diagnostic tool for identifying *Mycobacterium tuberculosis* is culture from biopsy fragments. In our case, this was not performed, and the diagnosis was based on a combination of clinical, radiological, biological, and histological evidence, particularly the presence of a tuberculoid granuloma despite the absence of caseous necrosis. Furthermore, the GeneXpert MTB/RIF test on sputum was positive. This test is recommended by the WHO as the most commonly used rapid diagnostic tool worldwide for detecting both tuberculosis and rifampicin resistance [3,8]. However, GeneXpert MTB/RIF on laryngeal biopsies does not appear to be highly sensitive for diagnosing laryngeal tuberculosis [6].

Conclusion

Laryngeal tuberculosis remains an underdiagnosed condition in patients with active pulmonary tuberculosis. Therefore, it is crucial for physicians managing both pulmonary and otorhinolaryngological tuberculosis to remain vigilant for often subtle and nonspecific symptoms

that may indicate laryngeal involvement.

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Contribution des auteurs: All authors contributed to the writing of this article and reviewed its content.

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