# ENT manifestations of tuberculosis

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## Introduction

Tuberculosis (TB) is one of the oldest diseases that affects mankind, and represents a significant cause of morbidity and mortality, especially in developing countries. It is an infectious and contagious disease caused by Mycobacterium tuberculosis, also called Koch's Bacillus (BK), which has been discovered over 100 years ago, by Robert Koch. Regarding the transmission of the infection, it usually occurs through direct contact, but indirect contagion by handling contaminated material can occur.

According to the World Health Organization (WHO) reports from 2021, in 2020 there was a noticeable decrease in the reported cases: from 7.1 million to 5.8 million.

In accordance with the affected organ, TB can be classified as pulmonary TB, primary TB, TB reactivation and extra pulmonary TB.

Besides pulmonary TB, extra pulmonary manifestation of tuberculosis can include ear, nose and throat manifestations in the form of lymphadenopathy, otitis media, laryngitis, pharyngitis and nasal TB.

## Materials and Methods

A 51-year-old white male, known with tuberculosis, inconsistently treated, malnourished, smoker and chronic alcohol user presented to the otolaryngology service with symptoms of dyspnea that has been present for approximately a month and has worsened in the past 48-78 hours, hoarseness, respiratory draft and respiratory carnage. SpO2 levels without an oxygen mask was droped to 90% .

On examination with a flexible endoscope paramedian vocal fold paralysis was encountered, with reduced respiratory space by more than 70%. Computed tomography of lung base showed paramediastinal lymphadenopathy.

Following the clinical and paraclinical examination, an emergency tracheostomy was performed in order to restore proper airflow . After the intervention, the patient reaches a saturation of 95%-97%, the respiratory draft and the respiratory carnage disappeared, but the cords did not regain their mobility, so the tracheostomy tube remained. Sputum test was positive for Koch's bacillus. The treatment was started after the drug susceptibility test was performed.

## Results

The risk factors for TB infection include overcrowding, immunocompromised status, malnutrition, indoor air pollution, diabetes, smoking and alcohol consumption.
Diagnosis of ear, nose, throat tuberculosis is complex and requires the involvement of several departments as well as an complete clinical examination, including endoscopy, chest X-ray, computed-tomography (CT) of the region.

Hematoxylin-eosin stains are used in histopathological examination, revealing chronic granulomatous inflammation, necrosis/caseation with Langerhans giant cells, also with the help of Ziehl Neelson stained slides.

In the Microbiology Department for diagnosis, the samples are usually growth on the egg-based Lowenstein- Jensen. This process can take up to six weeks, but the results are usually obtained within 7 to 21 days. Drug susceptibility testing is also a reason to perform classical microbiology tests.

The WHO guidelines are very specific regarding the treatment of extra pulmonary TB. Surgery has no curative role. Antituberculous chemotherapy should be administered following the same 4 drug regimen for 2 months, followed by 2 drug regimen for 4 months.

## Conclusions

TB is still a prevalent health problem in developing countries.

The diagnosis is based on histopathological examination since smear and culture tests take up to two months to provide a result and are difficult to perform in extra pulmonary TB due to the low number of bacilli in the specimen.

Although proper treatment for TB was recived by the patient, no improvement of the bilateral vocal cord paralysis was obtained. In some cases, even with fully resolved pulmonary disease, extrapulmonary impaiment may persist.

In the head and neck region, it is a rather rare occurrence but can affect any organ, both as primary and secondary infection, and it is frequently misdiagnosed as a malignancy.

Due to the high prevalence of pulmonary tuberculosis in Romania, this diagnosis must be considered by otolaryngologists during routine practice.

## References

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