

## CASE STUDY- EXTRANODAL ENT TUBERCULOSIS

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## ABSTRACT

**INTRODUCTION:** Tuberculosis (TB) of the head and neck is one of the rarer forms of extrapulmonary tuberculosis but still poses a significant clinical and diagnostic challenge. **Purpose:** The aim of this study is to discuss diagnostic problems of the extra nodal ENT TB and to analyze its epidemiological and clinical specificities. **Materials and methods:** We report a study of 10 cases of extra-nodal locations of TB managed in the department of ENT at Sree Balaji Medical College And Hospital between 2013 and 2015. **Results:** The disease affected the nasopharynx in 6 cases, the tonsils in 2 cases and the larynx in 2 cases. The clinical signs as well as radiology and endoscopy are not specific. Diagnosis was based on histopathological examination. All our patients received anti-tubercular chemotherapy. The evolution was favorable with 12 months average outcome. **Conclusion:** There are no

pathognomonic features indicative of this disease. It is important for otolaryngologists to mention TB as a differential diagnosis in head and neck malignancies and other chronic non infective and infective pathological conditions. Early diagnosis and therapy may prevent needless and risky surgery.

**KEYWORDS:** Tuberculosis; Extra nodal; Head and neck, Extra pulmonary.

## INTRODUCTION

Tuberculosis (TB) is a chronic infection, caused by mycobacterium tuberculosis. The primary site is commonly the lung. Nevertheless, in the last decades, we noted an increase of ENT TB incidence. Lymph nodes remain the most frequent location involved. Although uncommon, other extranodal ENT sites could be compromised. The clinical signs as well as radiology and

endoscopy are not specific. The aim of this study is to discuss diagnostic problems of the extra nodal ENT tuberculosis and to analyze its epidemiological and clinical specificities.

## MATERIALS AND METHODS

We carried out a 2-year retrospective study of 10 patients having extra-nodal locations of TB managed in the ENT department of Sree Balaji Medical College and Hospital between 2013 and 2015. Patients' medical records had been evaluated. Epidemiological factors, clinical condition at presentation, biological and radiologic explorations underwent, methods of biopsy, histopathology results, treatment modalities, follow-up, and outcome were all analyzed.

Diagnosis was suggested by histopathology results that revealed chronic granulomatous inflammatory exudates, with or without centrally caseating necrosis. In the cases without caseating granuloma, the diagnosis was confirmed with complete recovery under anti-tuberculosis treatment.

## RESULTS AND OBSERVATION

Our study included 7 men and 3 women aged from 6 to 65 years with a mean age of 46 years. The disease affected the nasopharynx in 6 cases, the tonsils in 2 cases and the larynx in 2 cases. Only one patient reported TB contagion (family history of TB). In a seven-year-old child, previous BCGitis has been noted two months before tonsil tuberculosis.

The mean duration of symptoms before consulting was 9 months. Clinical presentation varied with the site affected.

For the 6 cases of nasopharyngeal TB, patients suffered from chronic nasal obstruction, blood-stained rhinorrhea with infected postnasal drip associated in 8 cases with neck masses. The rigid nasal endoscopy examination revealed bulging or unequally thickened mucosa of the posterosuperior nasopharyngeal.

In 2 cases of tonsil infection by tuberculosis, patients consulted the physician for odynophagia. Clinical examination showed hypertrophied ulcerated tonsil.

Two patients with laryngeal TB had chronic hoarseness. Transoral flexible flexible laryngoscopy revealed a budding ulcerative aspect of the larynx.

Blood investigations such as total and differential white blood cell count were normal in all cases. Tuberculin skin test, performed in 7 patients, was positive in 4 cases. Ultra sound imaging, Computerized tomography, Magnetic resonance imaging was performed in all 10 patients to explore the involvement of other organs. Chest X-ray showed no associated pulmonary lesion in all cases.

Clinical, biological exploration and imaging were misleading. Diagnosis of tuberculosis was mainly histopathological. Our patients underwent different procedures to obtain biopsy. Two patients were subject to laryngoscopy and biopsy under general anesthesia. Tonsillectomy was required in 2 cases. 8 others were subjected to biopsy of the affected site under local anesthesia.

Pathology report was suggestive of TB in all cases. It revealed epithelioid cell granulomas with or without caseating necrosis. All our patients received medical treatment based on anti-tubercular chemotherapy: Four drug regimen (rifampicin, isoniazid, ethambutol and pyrazinamide) in the intensive phase of two months followed by two drugs (rifampicin and isoniazid) in a continuation phase of further 6–8 months. The evolution was favorable in all cases. Neither resistance nor recurrence had been reported with a 12 month average follow-up.

## DISCUSSION

Tuberculosis, caused by *Mycobacterium tuberculosis*, is one of the most devastating bacterial diseases to affect humans. According to WHO global tuberculosis report, in 2011, there were an estimated 8.7 million new cases of TB (13% co-infected with HIV) and 1.4 million people died from TB.<sup>[1]</sup> This chronic infection can affect virtually any organ system in the body. With the advent of antituberculosis chemotherapy, the incidence has come down significantly, but there is a resurgence of extrapulmonary tuberculosis including primary otorhinolaryngeal TB. This is in part due to human immunodeficiency virus (HIV).<sup>[2]</sup> TB of the head and neck comprises approximately 10–15% of cases of extra pulmonary TB, the majority of which are cervical lymph node disease. Extranodal head and neck TB is rare and represents less than 1% of all TB sites.<sup>[3, 4 and 5]</sup>

Inoculation of extranodal head and neck locations occurs in different ways. Primary involvement probably occurs due to reactivation of dormant acid fast bacilli in the lymph system or due to direct mucosal infection after inhalation of the bacilli. Secondary

involvement occurs by hematogenous dissemination from pulmonary disease or direct spread from the lung.<sup>[6 and 7]</sup>

Nasopharyngeal TB is the most common extranodal ENT site. It affects mainly young people. Main symptoms are nasal obstruction, bleeding and rhinorrhea. Lymphadenitis is associated in 50–70% of the cases (61.5% in our series). Endoscopic examination may reveal a polypoidal mass, ulceration, plaque, or diffuse mucosal thickening. All these findings may suggest nasopharyngeal carcinoma, lymphoma, or Wegener's granulomatosis. Infections such as syphilis, leprosy, and fungal diseases may have a similar appearance.<sup>5, 6 and 7</sup> Tonsillar TB commonly presents with sore throat and difficulty in deglutition. TB of the tonsils might be suspected if the tonsils are enlarged unequally on the two sides and are associated with cervical lymphadenopathy. Predisposing factors for primary oral tuberculosis include alcoholism, HIV infection, poor dental hygiene, dental extraction, periodontitis, and leucoplakia. Differential diagnosis of oral and pharyngeal tuberculosis includes traumatic ulcers, aphthous ulcers, hematological disorders, actinomycosis, syphilis, midline granuloma, Wegner's disease, and malignancy.<sup>[6 and 9]</sup>

Presenting symptoms of laryngeal TB are mainly hoarseness (80–100%) and odynophagia (50–67%). Laryngeal TB can involve all parts of the larynx. The vocal cords are most frequently affected. Laryngeal TB can manifest as edema, hyperemia or ulcerative lesions. The distinction between laryngeal TB and chronic laryngitis or laryngeal carcinoma is particularly difficult. In the past, laryngeal TB used to be a common complication in advanced pulmonary tuberculosis. Today, laryngeal TB as a primary site is increasing. In our series, no patient showed an associated pulmonary TB.<sup>5, [6 and 10]</sup>

Clinical presentation, imaging and tuberculin skin test are not specific. TB should be considered in the differential diagnosis of soft tissue masses of the head and neck, particularly when the imaging findings and clinical presentation are atypical. The diagnosis of TB is mainly based on histopathological examination. Mycobacterial smear and culture are difficult in extrapulmonary tuberculosis, because of low concentration of pathogens in specimens and confirm TB with a delay of 2 months. In cases of suspected extrapulmonary tuberculosis, rapid and accurate laboratory diagnosis by PCR (polymerase chain reaction) is useful.<sup>[2, 5 and 6]</sup>

According to WHO guidelines, extrapulmonary disease should be treated with the four drug regimen for two months followed by two drugs during 4 months.<sup>[13]</sup> Antituberculous chemotherapy remains the cornerstone of treatment for extrapulmonary tuberculosis, and the role of surgery is mainly to establish an early diagnosis and initiate early treatment.<sup>[2]</sup>

## CONCLUSION

Rare occurrence and lack of characteristic symptoms of head and neck tuberculosis often lead to misdiagnosis. Most often, this is a surprise diagnosis. Histopathological examination is the most important diagnostic procedure. The treatment is based on anti-tubercular chemotherapy.

## Conflict of interest

We have no conflict of interest to declare.

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