

Tuberculosis in Otorhinolaryngology Uncommon but Not Rare

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Abstract

Tuberculosis is one of the principal causes of disease and mortality in the world, occurs in children and adults, as an acute, sub-acute, or chronic infectious disease which affects all tissues of the body and represents approximately 80% of tuberculosis cases in adults. Of the forms of extrapulmonary tuberculosis, the most frequent location is lymphatic and is rarer in the ENT area but is still an important form of extrapulmonary tuberculosis, which makes it an important clinical and diagnostic challenge to the otolaryngologist. The diagnosis of disease must be demonstrated by the culture of *Mycobacterium tuberculosis* or by histology.

Keywords: Tuberculosis (TB); *Mycobacterium tuberculosis*; Otorhinolaryngology

Introduction

Pulmonary Tuberculosis (TB) is one of the main causes of disease and mortality due to an infectious agent worldwide, *Mycobacterium tuberculosis* [1-4], it represents 80% of the tuberculosis cases [1] presents as an acute, subacute, or chronic infectious disease. Tuberculosis lesions can be primary or secondary to lung injury [5].

Otolaryngology is an uncommon area of presentation for tuberculosis, but it is not rare. The larynx is the most common area of manifestation, excluding cervical lymphadenitis [6]. There is an association of patients with pulmonary TB and TB in the otorhinolaryngeal area in 25 - 30% of cases [7], the second most frequent otorhinolaryngology location for TB is the middle ear and the mastoid cells, where early diagnosis is important.

It is not frequent for otolaryngologists to consider TB as a differential diagnosis, which leads to erroneous diagnoses and inadequate treatments. The incidence and spectrum of tuberculosis have increased because of the increase in immunosuppressive diseases [2] such as AIDS.

The smear and culture of positive mycobacteria, and the histopathological diagnosis of a chronic granuloma make the diagnosis of TB.

The tuberculosis diagnosis is based on the following clinical characteristics and laboratory diagnosis.

Laryngeal tuberculosis

The clinical features of laryngeal tuberculosis are rarely seen in clinical practice, the common symptoms are usually hoarseness, odynophagia, and dysphagia along with loss of weight and appetite. Indirect laryngoscopy/laryngeal endoscopy reveals diffuse erythema and granulomatous changes of the vocal cords. Microlaryngoscopy, laryngeal endoscopy, and biopsy establish the diagnosis made under general anesthesia. Histopathological examination, mycobacterial culture, and susceptibility tests provide the diagnosis.

Middle ear tuberculosis

Persistent otorrhea to the use of various antibiotics, accompanied by symptoms such as hearing loss, otalgia, and sometimes facial paralysis can be symptoms to evaluate. On physical exami-

nation, pale polypoid granulation tissue is evident. The treatment from exploratory tympanotomy to mastoidectomies, the definitive diagnosis by histopathology and the samples are sent for histopathological examination, mycobacterial culture, and susceptibility testing.

Tuberculosis of the nasal and paranasal region

Nasal obstruction, rhinorrhagia, epistaxis, and headache, are common symptoms of this disease. In the physical assessment or with nasal endoscopy, nasal and nasopharyngeal granular lesions are observed, a biopsy is possible to perform under local anesthesia. The obtained material is sent for both histopathological examination, mycobacterial culture and susceptibility testing.

Pharyngeal tuberculosis

Pharyngeal tuberculosis is a rare extrapulmonary manifestation. Pharyngeal tuberculosis presents as the main reason for consultation odynophagia and long-term difficulty in swallowing, where there is no response to conventional treatment. On physical examination, the posterior pharyngeal wall, tonsils, and uvula showed the presence of whitish, punched-out lesions, erythematous and swollen mucosa. There is also bilateral lymphadenopathy in the upper and middle jugular region, painless and without signs of phlogosis.

Laboratory diagnostics

The material obtained from the biopsies goes to the Histopathology laboratory, the Microbiology laboratory for smears, culture, and PSD of mycobacteria.

Histopathological examination is performed by staining with hematoxylin-eosin. Diagnosis is provided by the presence of chronic granulomatous inflammatory exudates, with or without classification.

The microbiological diagnosis through the detection of acid-fast bacilli in smears. Although it may take 6 weeks or longer for the organism to grow on solid culture media, growth generally occurs within 7 to 21 days with liquid culture media. Culture is also necessary for drug susceptibility testing. On the other hand, molecular techniques, such as the polymerase chain reaction, detect DNA or RNA from samples with results much faster than culture and can often be obtained in 24 - 48 hours [10].

The definitive diagnosis is made by the histological study of the biopsy of the lesion and the isolation of the mycobacterium. Identification of the latter is important, since the finding of acid-fast bacilli may be due to an infection caused by nontuberculous mycobacteria.

Surgery is performed to establish the diagnosis and be able to begin effective treatment, therapy starts with 4 drugs [11] initial phase with isoniazid, rifampicin, pyrazinamide, and ethambutol followed later treatment with isoniazid and rifampicin.

Discussion

Tuberculosis (TB) is one of the most frequent granulomatous infections that affect the ENT region. With the advent of TB therapy, the incidence has dropped significantly, but there is a resurgence of extrapulmonary TB (EPTB), including primary otolaryngological TB due to the human immunodeficiency virus (HIV).

The diagnosis of the disease in otorhinolaryngology is a challenge since the symptoms are like those of other pathologies. Differential diagnoses should be made with other chronic infections, such as fungal infection, syphilis, leprosy, with non-infectious diseases such as neoplasms, Wegener's granulomatosis [12,13]. This is possible through a histopathological examination since each of these conditions has a characteristic picture in histology.

Laryngeal tuberculosis and tuberculosis of the middle ear, frequently associated with pulmonary tuberculosis [7], but can also present as primary tuberculosis in any of these areas.

Patients with the immunosuppressive disease are more likely to have primary TB, especially of the extrapulmonary form [8].

Conclusion

The suspected diagnosis of TB disease in the ENT area is important to establish adequate surgical treatment with sampling and thus be able to begin antituberculosis treatment. Tuberculosis in the primary ENT area can present without coexisting pulmonary tuberculosis. The histopathological (biopsy) and microbiological (culture) diagnosis of otorhinolaryngological TB given a positive result.

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