

LARYNGEAL TUBERCULOSIS: A RECENT REVIEW

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ABSTRACT: Tuberculosis has become a major health problem in the recent years. Extrapulmonary tuberculosis is gaining importance and it accounts for approximately 15% of all new cases. Laryngeal tuberculosis is one of the rarer forms of extrapulmonary tuberculosis, and today laryngeal involvement of the tuberculosis infection is less than 1% among tuberculosis patients. It may be confused with laryngeal malignancies, because it is usually seen in smoker male patients and it is generally accompanied by hoarseness and appearance of a mass at endoscopy. Usually, it is seen as a complication of pulmonary tuberculosis. When tuberculosis is as widespread as today, laryngeal tuberculosis should also be considered in differential diagnosis of patients presenting with sore throat, otalgia and hoarseness. In order to reach a definitive diagnosis microbiological and histopathological sample should be taken.

KEYWORDS: Laryngeal tuberculosis, mycobacterium tuberculosis, Antituberculous agent, Dysphonia, vocal cords.

INTRODUCTION:

Mycobacterium tuberculosis, a Gram positive, Acid fast bacillus is the causative organism for most forms of tuberculosis. It was first described by Robert Koch in 1882. Since the World Health Organization declared tuberculosis as a global emergency in 1993, the incidence of laryngeal TB has been on the rise worldwide [1]. Tuberculosis is still one of the most common granulomatous diseases of the larynx. It is an uncommon condition and it occurs in 1-10% of all cases of tuberculosis [2]. Laryngeal tuberculosis is so infectious and it could easily spread to others. It has various presentations that cause diagnostic problems [3]. In this paper we give a review of the clinical features, histopathology and recent diagnostics methods of laryngeal tuberculosis.

EPIDEMIOLOGY:

Peak incidence in the past was seen between the second to third decades of life. Symptoms were cough, haemoptysis, fever, weight loss and night sweats. An ulcerative, granulomatous lesion was generally positioned on the posterior part of the larynx due to accumulation of sputum in the arytenoid region in bed-bound patients [4]. And in the recent laryngeal tuberculosis was seen to be found during the fourth to fifth decade of life presenting first and foremost with hoarseness (80% to 100%). Other symptoms are odynophagia (50% to 67%) and to a lesser extent, dysphagia, dyspnoea, stridor, cough and haemoptysis. [5]. The reasons for increasing incidence of laryngeal tuberculosis is because of the wide endemic spread of HIV, bad living and nutritional conditions [6]. Also prevalence of mycobacterial strains with rising resistance to the most available chemotherapeutic agents [7].

CLINICAL FEATURES:

The most common presenting symptom is hoarseness of voice, dysphagia or odynophagia, cough, weight loss, fever and night sweating [8]. Laryngeal involvement affects the posterior portion of the true vocal cords, the arytenoid cartilages, and the intraarytenoid space [9]. The characteristics of laryngeal TB have changed over the years and it has become a challenge for otolaryngologists to distinguish this disease from others. In laryngoscopy, laryngeal lesions vary from erythema to ulceration and exophytic masses. These laryngoscopic appearances mimic other laryngeal lesions such as neoplasm, severe exudative and fibrinous inflammation and chronic laryngitis. [10]

HISTOPATHOLOGY:

Histopathology revealed the existence of chronic granulomatous inflammation with caseous necrosis [10] multinucleated giant cell were seen in Hematoxylin and Eosin staining. The presence of laryngeal lesions with atypical histopathology (chronic granulomatous inflammation or chronic inflammation) which had a complete response to anti-tuberculosis therapy [11].

INVESTIGATIONS:**Laryngoscopic Examination**

Epiglottis—Erect with pale mucosa and granulomatous ulcers. Thin atrophic pale and oedematous mucosa with intermittent hyperaemic areas over the larynx. Arytenoids and Aryepiglottic folds—Oedematous arytenoids with granulomatous lesions over arytenoids and Aryepiglottic folds. Movements of arytenoids are normal. Vocal cords are mobile. Both pyriform fossa and area behind the arytenoids are normal [12].

Chest Xray:

Diffuse Millitary Lesions can be seen[12].

Sputum Examination:

Microbiological sputum examination shows tubercle bacilli [13]

CT Scan:

Bilateral miliary mottling, ground glass opacities, tree in bud appearances and cavitary lesions with an internal hypodense area in the lungs with associated segmental consolidation represents Tuberculosis[14]

DIAGNOSIS:

The diagnosis of tuberculosis is suggested by a positivemantoux test, sputum for AFB, caseating granulomason histopathological examination, classical radiological

features, elevated ESR and positive AFB culture. Laryngealswab examined under fluorescent LED microscopeand AFB culture as confirmation is by identification of

M. tuberculosis. [15]In LED microscope, fluorescent dye namedauramine phenol is used as the primary stain and 0.1%potassium permanganate is used for counterstaining. LEDmicroscopy provides a reliable alternative to conventionalmethods and has many favorable attributes that facilitateimproved, decentralized, diagnostic services [16] The findings of laryngeal tuberculosis can be categorized into four groups i.e. (a) whitish ulcerativelesions (40.9%) (b) non-specific inflammatory lesions(27.3%), (c) polypoid lesions (22.7%) and (d) ulcero

fungative mass lesions (9.1%) [7].Development of two real-time PCR assays, based on the IS6110multicopy element and on the *senX3-regX3* intergenic region, also provided a rapid method for the diagnosis of mycobacterial infections[19].

TREATMENT:

The treatment may be directed to complete arrest of pulmonary/laryngeal tuberculosis and to relieve the laryngeal symptoms [17]. Antituberculous chemotherapy is the mainstay of treatment for tuberculosis. The drugs include isoniazid, rifampicin, pyrizinamide, ethambutol, streptomycin. Local treatment of the lesions in the larynx rarely includes local cleansing alkaline sprays, local antiseptic insufflations, curetting, galvano-cautery etc. The general care and hygiene of the patient is particularly of great importance. Complete rest to the larynx helps in early healing of the lesions. Tracheostomy may be is required in cases of increasing or established stenosis with granulations or in case of cicatricial contraction in healed cases.[18]

CONCLUSION:

Tuberculosis can involve virtually any organand it manifests itself in various forms [20]. Whentuberculosis is as widespread as today, laryngeal tuberculosis should also be considered in differentaldiagnosis of patients presenting with sore throat,otalgia and hoarseness. In order to reach a definitivediagnosis microbiological and histopathologicalsamples should be taken.

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