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Laryngeal Tuberculosis as an Indicator of Unrevealed Pulmonary Tuberculosis

Richa Agrawal and Shrikant Phatak*

Department of ENT, Choithram Hospital and Research Center, Indore, India

***Corresponding Author:** Shrikant Phatak, Department of ENT, Choithram Hospital and Research Center, Indore, India.

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Abstract

In the era of modern medicine Tuberculosis is still challenging the health care system though it is curable yet it still steals lives silently worldwide. Laryngeal tuberculosis (LTB) represents just 1% of all TB cases. However, it is one of the most serious forms of extra pulmonary TB. With the development of multi drug resistance, classical presentation of laryngeal TB is changing. We hereby report 9 cases of laryngeal TB with atypical presentations where patient presented primarily with the laryngeal symptoms despite underlying active lung lesions. Otolaryngologist and Airway physicians need to be more alert to the emergence of laryngeal tuberculosis with atypical clinical manifestations and consider it in the differential diagnosis of all laryngeal diseases.

Keywords: Pulmonary Tuberculosis; Laryngeal Tuberculosis

Introduction

Laryngeal involvement in TB represents serious complication of pulmonary TB. Tubercular laryngitis is usually not considered in differential diagnosis of patients presenting with hoarseness of voice. TB laryngitis is frequently misdiagnosed as laryngeal cancer due to similar appearance of the lesion on video laryngoscopy [1]. TB larynx has changed presentations in several ways.

We hereby discuss 9 such cases of secondary laryngeal TB with primarily laryngeal symptoms.

Material and Methods

The study was conducted in the department of ENT over a period of 1 year in Choithram hospital, Indore. 93 patients with laryngeal symptoms were subjected to video laryngoscopy. Nine patients (6 female, 3 male) were suspected to have lesions suggestive of laryngeal tuberculosis. None of the patients gave history of pre-existing pulmonary TB.

The commonest presenting symptoms were change in voice usually high pitch, unilateral pain in throat and painful dysphagia. One patient gave history of difficulty in breathing and strain on phonation. Mean duration of symptoms was 3 months. 70degree rigid endoscopy of larynx showed unilateral asymmetric congestion of false and true vocal cords (Figure 1 and 2), granular lesion on true vocal cord (Figure 3), thickened vocal cords with inter arytenoid granulation (Figure 4), edematous AE fold and slough covered arytenoids (Figure 5a and 5b), subglottic granulation and discharge (Figure 6) epiglottic oedema with erosion (Figure 7).

Suspecting lesions to be tubercular, sputum for AFB and HRCT chest was done where all 9 patients were sputum positive for AFB on smear microscopy. Gene expert was done for determining drug sensitivity of mycobacterium tuberculosis.

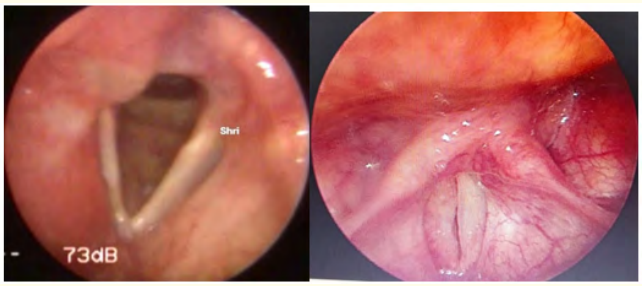

Figure 1 and 2: Asymmetric congestion of false and true vocal cords.

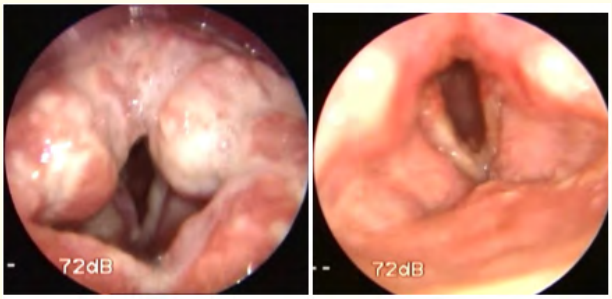

Figure 5a and 5b: Edematous AE fold and slough covered vocal cords**.**

Figure 3: Granular lesion on true vocal cord.

Figure 6: Subglottic granulation and purulent discharge.

Figure 4: Thickened vocal cords with inter arytenoid granulation.

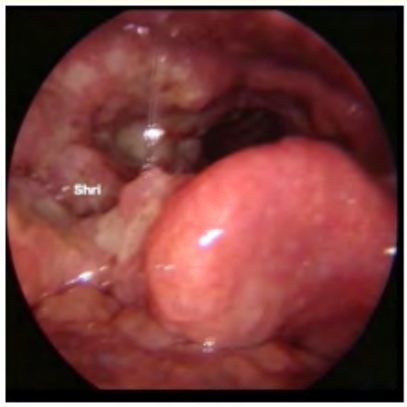

Figure 7: Epiglottic oedema with erosion.

HRCT chest showed findings in the form of Mediastinal nodes, Infiltrations both the lungs (Figure 8).

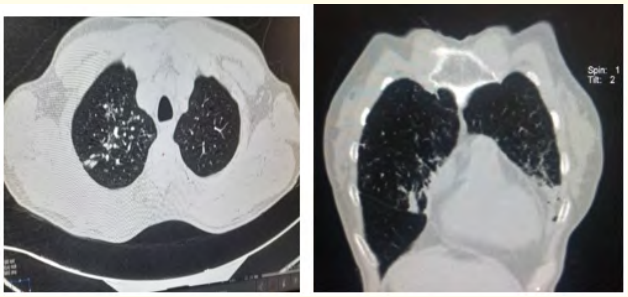

Figure 8: CT images showing mediastinal nodes, bilateral pulmonary infiltration. Basal Infiltration.

Correlation of these findings lead to diagnosis of laryngeal tuberculosis secondary to pulmonary tuberculosis. Patients were referred to Pulmonology department for initiation of AKT therapy. All patients were given category 1AKT.As per the NCT guidelines category one DOTs regime was started. This included

- Rifampicin 10 mg/kg body weight
- Isoniazid 5 to 10 mg/kg body weight
- Ethambutol 20-30 mg /kg body weight

Pyrazinamide 20-30 mg/kg body weight were given for 6 months.

Check VLS was done at 1 month and 3 months follow up. The lesions reduced significantly at one month follow up while larynx showed near normal appearance at 3 months follow up (Figure 9). None of the patients required laryngeal biopsy despite lesions mimicking laryngeal cancer.

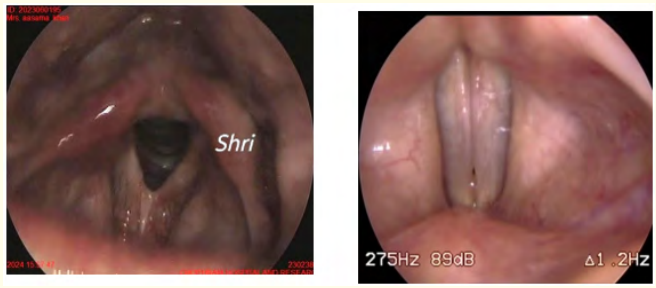

Figure 9: Post treatment 3 months.

Discussion

Laryngeal tuberculosis highly mimics malignant lesions [2] hence high level of clinical suspicion is a must to avoid unnecessary laryngeal biopsy and surgery.

The laryngeal involvement in tuberculosis could be primary or secondary, secondary is more common. However, according to Clery and Batsakis, localization in the anterior half of the larynx now occurs twice as often as in the posterior half, and vocal cords are the most commonly affected site (50-70%), followed by false cords (40-50%), and epiglottis, aryepiglottic folds, arytenoids, posterior commissure and/or sub glottis (10-15°%) [3]. These findings are consistent with our study where vocal cords were the most affected site.

The mode of spread could be direct bronchogenic, hematogenous or lymphatic spread. In case of bronchogenic spread, posterior larynx is more affected while hematogenic or lymphatic spread affects mainly vocal cords and epiglottis causing dysphonia and odynophagia [4]. According to Shin., *et al*. [5] findings of laryngeal TB may be categorized in 4 groups

- Whitish ulcerative lesions (40.9%),
- Nonspecific inflammatory lesions (27.3%),
- Polypoid lesions (22.7%),
- Ulcerofungative mass lesions (9.1%)

The diagnosis of laryngeal tuberculosis is based on the biopsy of the involved area, a relatively complex procedure under general anesthesia but therapeutic trial & subsequent evaluation of laryngeal lesion might be helpful in cases of low probability of malignancy [6].

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 suspicion, radiological and sputum examination.

Early biopsy to rule out malignancy may not always be preferred if the above-mentioned investigations (chest x-ray, HRCT chest, sputum AFB) are positive for tuberculosis and if there is prompt

response to ATT. According to Kulkarni., *et al.* response to ATT is an important diagnostic criteria for laryngeal tuberculosis [7]. If the response to ATT is not complete, then a biopsy is indicated at that stage. This approach is safe and logical, as giving general anesthesia (for performing a laryngeal biopsy) to an active pulmonary Koch's case is not always practically possible, because of anesthesia concerns, drug interactions, and infectivity concerns [8].

Treatment is primarily medical and is based on anti- tuberculosis therapy. The duration of treatment typically ranged from 6 to 12 months. Surgery is no longer part of the current treatment options, except for patients with laryngeal stenosis [9].

The successful resolution of the cases serves as a compelling testament to the power of interdisciplinary coordination and precision medicine, providing valuable insights into navigating the intricate landscape of laryngeal tuberculosis [10].

Conclusion

- Laryngeal TB is known as "great deceiver" because its appearance on laryngoscopy often mimics laryngeal cancer.
- Laryngeal tuberculosis can have atypical laryngeal findings unlike classical signs like moth eaten or turban epiglottis.
- Laryngeal TB should be considered in the differential diagnosis of patients presenting with hoarseness of voice. A high index of clinical suspicion of laryngeal lesion to be tubercular avoids unnecessary laryngeal biopsy to rule out laryngeal malignancy.

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