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Case Report

Pulmonary tuberculosis initially presented by hoarseness

To the editor:

Laryngeal tuberculosis, or tuberculous laryngitis, involves infection of the larynx by *Mycobacterium tuberculosis*, mostly spread through the airway from the primary site, pulmonary tuberculosis. Hoarseness is one of the most common symptoms.

A 33-year-old female patient, presenting with a gradually worsening hoarse voice for 3 months, visited the outpatient Ear, Nose and Throat (ENT) clinic. She also suffered from a mild cough and a scanty amount of sputum lasting for about four weeks. She had no fever, night sweating or weight loss. She never smoked and had no medical history of diabetes mellitus, hepatitis, or tuberculosis.

The laryngoscopic examination revealed multiple ulcerative mucosal lesions on both sides of the membranous vocal folds with erythematous and swollen mucosal surfaces (Fig. 1A). Considering her age and non-smoking status, a granulomatous disease was primarily considered in her larynx rather than a malignancy, so she was asked to undergo medical examinations geared to detecting a primary lesion in the lungs. An initial chest radiography was normal, but in high resolution computerized tomography (HRCT), subtle infiltrating densities in the right upper lobe were found, suggesting active pulmonary tuberculosis (Fig. 2A), subsequently confirmed by bacteriological diagnosis.

Her respiratory symptoms disappeared in a few weeks and her voice gradually returned back to normal in 2 months while taking anti-tuberculosis medications [1]. Most of the abnormal findings disappeared in her vocal cords (Fig. 1B) and in the lungs (Fig. 2B) in the examinations repeated after 6 months of therapy.

Mucociliary clearance in the airway is a basic and primitive, but nonetheless important, defense mechanism in the respiratory system. In the pulmonary infection, the germs are toileted through the airway from the infection site through the larynx, and finally into the potent bactericidal organ, the stomach [2]. During the process of clearing up, the larynx might be vulnerable and affected by infectious agents because of its narrowed transit path. However, the larynx itself is not a common primary site of bacterial infection, especially by *M. tuberculosis*. The laryngeal involvement of *M. tuberculosis* is called either laryngeal tuberculosis or tuberculous laryngitis in most scientific literature, often confused with laryngeal malignancy during the laryngoscopic examination [3–7]. Up to 85% of laryngeal tuberculosis occurs secondarily combined with active or inactive pulmonary tuberculosis [5]. In this case, due to her voice change, subtle, but active, pulmonary tuberculosis could be detected by undergoing chest radiography.

Hoarseness is the most common manifestation in laryngeal tuberculosis, followed by cough and odynophagia [5,8].

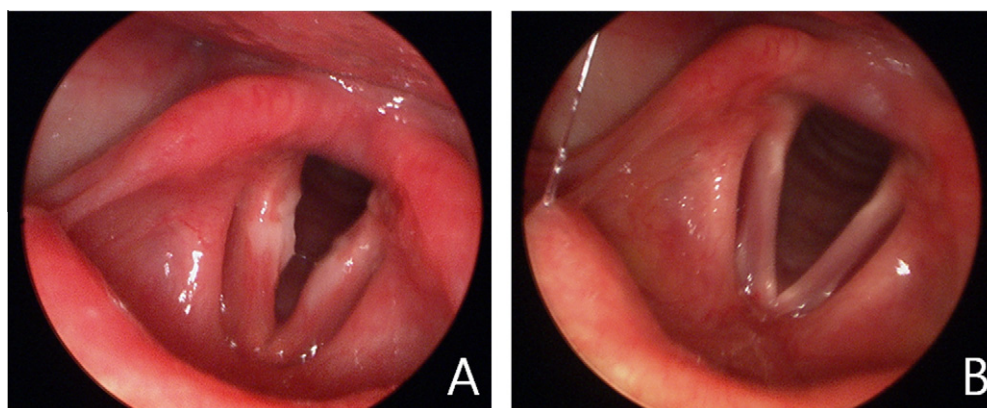


Fig. 1 – Laryngoscopic examination of the larynx at presentation (A) and thereafter in 6 months (B). Multiple ulcerative lesions were observed on both membranous vocal folds. Erythematous and swollen mucosal surface was noted in the larynx. Abnormal findings disappeared in 6 months of anti-tuberculosis therapy.

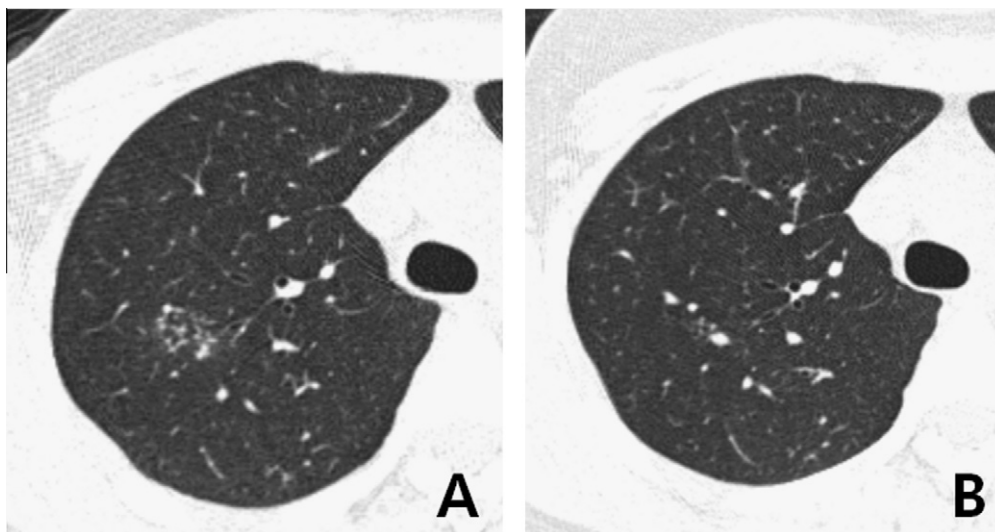


Fig. 2 – HRCT at presentation (A) and thereafter in 6 months (B). Although invisible in the simple chest radiography, subtle infiltration in the right upper lobe suggesting active pulmonary tuberculosis was seen in HRCT at presentation, which was cleared up in 6 months of anti-tuberculosis therapy.

During the laryngoscopic examinations, granulomatous or polypoid lesions are common, presumptively shown as features of laryngeal cancer [9]. In contrast, hoarseness itself is not a common manifestation of pulmonary tuberculosis, but may present when the granulomatous inflammation involves recurrent laryngeal nerves in the mediastinum [10–12]. In this case, laryngeal involvement with mucosal ulceration in the vocal cords secondarily to the pulmonary tuberculosis caused hoarseness.

The diagnosis of laryngeal tuberculosis is based on the biopsy of an involved area, a relatively complex procedure under general anesthesia, but therapeutic trials and subsequent evaluations of the laryngeal lesions might be helpful in cases of low probability of malignancy [5]. Whether a simple inflammatory process while toileting infected materials or actual mycobacterial infection on the larynx, the abnormal findings in this case were totally cleared up in 6 months' anti-tuberculosis medication. In case of the latter condition, longer anti-tuberculosis therapy might be considered as a treatment for extrapulmonary tuberculosis [13].

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