



LARYNGEAL TUBERCULOSIS IN CHILDREN - A RARE PRESENTATION

Paediatrics

Dr. Archana V.

Senior Resident, Sree Balaji Medical College And Hospital, Chrompet, Chennai, Tamilnadu.

KEYWORDS

INTRODUCTION

Now a days laryngeal tuberculosis has become a rare phenomenon with the introduction of an effective antitubercular treatment. Laryngeal tuberculosis was a common complication of active cavitary tuberculosis and military tuberculosis in the pre anti-tuberculosis treatment era, as the infected sputum loaded with tubercle bacilli would involve the larynx¹. This is a rare case of military tuberculosis with laryngeal involvement.

CASE REPORT

A 12 year old boy presented with the complaints of intermittent fever, high grade in nature and productive cough producing yellowish non-foul smelling sputum for the past 6 to 7 months. The child also presented with hoarseness of voice since the last 6 weeks. He had received BCG and there was no history of hemoptysis, dyspnea, dysphagia, loss of appetite or significant weight loss. But there was a history of close contact with an open case of tuberculosis patient. The boy had received several course of antibiotics for the above complaints, but still persisted to have the complaints.

The child was sick looking and anaemic. On examination he was febrile, pulse rate was 170/min, respiratory rate was 40/min, blood pressure was 120/70mmHg. Throat was normal. On auscultation there was bilateral diffuse rhonchi and bilateral scattered coarse crepitations.

Investigation were as follows

HB-6.5g/dl, TCL-8000/cumm, DLC: Polymorphs-60, lymphocytes-35, monocytes-1, Eosinophils-2. ESR-120mm/hr. Mantoux test and sputum for AFB were negative. Chest X-ray showed cystic lesions in the right lower zone and left upper zone with military mottling. Direct laryngoscope revealed a reddish inflammatory lesion over the left vocal cord, biopsy of the same revealed chronic granulomatous lesion with collection of epithelioid cells surrounded by lymphocytes, suggestive of tuberculosis.

The boy was diagnosed to have tuberculosis of larynx and started on anti-tubercular treatment. The child responded to the treatment and became afebrile in 2 weeks duration following which his hoarseness of voice also improved.

DISCUSSION

Usually middle aged men with advanced pulmonary tuberculosis will develop laryngeal tuberculosis, in-fact they will present with symptoms similar to laryngeal carcinoma^{2,3}. The most common cause of hoarseness in children are foreign body aspiration, trauma, congenital laryngeal anomalies, acute laryngitis and weakness of the laryngeal muscles, but the hoarseness which was the main complaint in our case is due to TB larynx, which is a rare presentation⁴. In the present scenario with the history and findings suggestive of tuberculosis, hoarseness in voice can be attributed to TB larynx⁵. Stridor is another uncommon symptom of TB larynx⁵. By far there are only a very few case reports of laryngeal tuberculosis in children which makes this case a rare one⁶.

Laryngeal tuberculosis can occur regardless of the immunization status and result of tuberculin test. There are some patients who were previously immunized with BCG vaccine have developed TB larynx⁵ and others have had a negative Mantoux test^{3,7}. Our patient had also received BCG and his Mantoux test was negative.

The pathogenesis of TB larynx may be either primary or secondary. Primary infection of the larynx occurs when there is an absence of pulmonary disease and the mycobacterium tuberculi directly infects

the mucosa via aerosolized particles leading to the formation of a granuloma⁸.

Secondary infection of the larynx may occur by direct spread of the bacilli as in active, advanced, cavitary pulmonary tuberculosis where the highly infectious sputum containing the bacilli is expectorated up on the tracheobronchial tree (bronchogenic theory). In this case the infection usually remains intralaryngeal, mainly around the true vocal cords. The lesions can be ulcerative and granulomatous. Healing occurs with minimal fibrosis. Hematogenous or lymphatic spread to the larynx occurs less frequently and is more likely in patients having minimal pulmonary involvement or military tuberculosis. Hematogenous spread is more common to the extrinsic larynx (i.e. epiglottis, arytenoids and aryepiglottic folds) although true cords may be involved. Diffuse vascular necrosis and severe painful edema often involves large areas of the larynx. Healing is usually accompanied by progressive fibrosis and stenosis may also occur^{3,7,8}. The adult form of laryngeal tuberculosis is invariably secondary to direct spread⁸. In contrast, children usually have no evidence of pulmonary disease and their chest-x-rays at presentation are usually normal^{3,7,8}. However, in this case our patient presented with prolonged chest symptoms, military mottling on chest X-ray and a localized tubercular granulomatous lesion on left vocal cord suggestive of an "adult" form of the disease. There were no confluent cavitary lesions in any segment which could suggest a bronchogenic spread of the infection to the larynx. Although military tuberculosis is usually associated with hematogenous dissemination and extensive involvement of the larynx with residual stenosis, however our patient had a pseudotumoral form of laryngeal tuberculosis with complete healing as evidenced by disappearance of hoarseness within 6 weeks of starting antitubercular therapy.

In recent years the clinical and morphological aspects of tubercular laryngitis have changed significantly from what they were before chemotherapy and the most common clinical form is now pseudotumoral tuberculosis¹⁰. Since majority of the patients have no evidence of chronic disease, they may be diagnosed as juvenile laryngeal papillomatosis, the most common laryngeal tumor in children^{7,10}.

A definitive diagnosis of laryngeal tuberculosis is made by isolating M. tuberculosis from a biopsy specimen, but this may not always be possible³. It was not done in our case and the diagnosis was evident from coexistent military tuberculosis, laryngoscopy findings and histopathology report. Remarkable response to anti-tubercular therapy further confirmed the diagnosis.

REFERENCES

1. Starke JR, Munoz F. Tuberculosis. In: Nelson Text book of Pediatrics, 16th Edn, vol 1. eds Behrman RE, Kleigman RM, Jenson HB. New Delhi, Harcourt India Pvt. Ltd., 2001; pp 885-897.
2. Ellis ME, Dunbar EM, Hussain M. Pediatric laryngeal tuberculosis. Tubercle 1983; 64: 37-39.
3. du Plessis A, Hussey G. Laryngeal tuberculosis in childhood. Pediatr Infect Dis J 1987; 6: 678-681.
4. Gupta S. Hoarseness. In: Differential Diagnosis in Pediatrics, 3rd Edn, New Delhi, Jaypee Brothers, 1999; pp: 223-226.
5. Rupa V, Mathew J, Bhanu TS, Date A. Pediatric laryngeal tuberculosis presenting with stridor. J Laryngol Otol 1989; 103: 787-788.
6. Farzand A. Primary tuberculosis of the larynx in children. Ear Nose Throat 1985; 64: 66-67.
7. Ulloa R, Avila ML, Soto M, Paris MM, Faingezicht I, Odio C et al. Laryngeal tuberculosis. Pediatr Infect Dis J 1998; 17: 758-760.
8. Ramadan HH, Wax MK. Laryngeal tuberculosis - A cause of stridor in children. Arch Otolaryngol Head Neck Surg 1995; 121: 109-112.
9. Rupa V, Bhanu TS. Laryngeal tuberculosis in the eighties-an Indian experience. J Laryngol Otol 1989; 103: 864-868.
10. Galletti F, Freni F, Bucolo S, Spano F, Gambadoro O, Pispica L et al. Laryngeal tuberculosis: considerations on the most recent clinical and epidemiological data and presentation of a case report. Acta Otorhinolaryngol Ital 2000; 20: 196-201.