Atypical Presentation of Laryngeal Tuberculosis in a Pediatric Patient

Chelsea Obourn, BS; Behrad Aynehchi, MD; Boris Bentsianov, MD
State University of New York Downstate Medical Center, Brooklyn NY

ABSTRACT

Objectives: Laryngeal tuberculosis (LTB) is uncommon and most often associated with a primary lung infection in immunocompromised adults. We describe an atypical presentation of LTB in a pediatric patient.

Methods: Office and operating room (OR) endoscopic findings and management of this abnormality are described. Additionally, a review of the literature highlighting trends in presentation and management is presented.

Results: A 15 year-old otherwise healthy girl presented with hoarseness of acute onset, unchanging and lasting eight months. There was no associated dyspnea, dysphagia, upper respiratory infection, weight loss, night sweats, cough, hemoptysis, exposure history, recent travel, or immigration history. Fiberoptic examination in the office and direct microfiberoptic laryngoscopy in the operating room revealed non-specific friability and leukoplakia of the true vocal cords and interarytenoid area. Biopsy specimens returned as necrotizing tuberculous granulation. The patient was placed on antituberculous medications with gradual improvement in voice and laryngoscopic findings. Chest films showed cavitations lesions in the upper lobes.

Conclusion: In contrast to prior reports where pediatric patients with LTB presented with insidious dysphonia and odynophagia, onset of symptoms in this case occurred relatively acutely. Despite this atypical presentation and relative lack of familiarity with procedural guidelines in managing this uncommon entity by otolaryngologists, reporting of diagnosed or suspected tuberculosis infection is mandated at multiple governmental health department levels. Consequently, this diagnosis must be considered in the interest of avoiding untoward outcomes for not only the patient, but the public as well.

INTRODUCTION

Laryngeal of involvement of TB is rarely seen now in the post anti-tuberculin era due to the abated occurrence of advanced or systemic spread of disease. The disease should be among the differential diagnosis of pediatric airway pathology. Our patient lacked the risk factors of immunodeficiency, travel, or exposure commonly seen with this entity; stressing the importance of a complete evaluation. Laryngeal TB generally manifests in the posterior glottis due to the path of inspissated pulmonary sputum. Lymphogenic or hematogenous spread is though to be the cause in cases lacking pulmonary disease.

A major difference in the presentation of laryngeal TB between adults and children is the presence of stridor in the latter group. Our patient did not feature signs of airway obstruction or compressive cervical lymphadenopathy as seen in prior reports. Unlike in past studies where hoarseness developed over a course of months, our patient developed her symptoms relatively rapidly over one week. Bronchoscopic findings in children and adults can be varied, but generally appears as non-specific inflammation in multiple sites, as was seen in our case.

Standard therapy for pediatric laryngeal TB includes rifampin, isoniazid, pyrazinamide, and ethambutol for four to six months. Steroids may be useful in cases of airway obstruction. With proper administration of anti-TB therapy, complete resolution is expected by three months. Despite the relative unfamiliarity with this entity for otolaryngologists practicing in developed countries, the public health consequences of misdiagnosing this infectious entity can be very serious and reporting is mandated to the county health department of most states.

CASE REPORT

A fifteen-year-old girl presented with a complaint of progressive hoarseness over the preceding eight months. The symptoms developed over a matter of one week and had failed to resolve. The patient denied dyspnea, dysphagia, history of respiratory tract infection, sick contacts, fevers, chills, night sweats, weight loss, cough, or hemoptysis. She also denied travel outside the country and was born in New York City. She did report an otherwise asymptomatic positive purified protein derivative (PPD) skin test as a young girl with medical treatment. Except for mild asthma, the patient had no other notable medical history. Findings on initial office fiberoptic laryngoscopy (Figure 1) included a fullness of the bilateral false vocal cords with mucosal irregularity. The remainder of the physical examination was unremarkable, including clear chest auscultation and the absence of cervical lymphadenopathy. Basic laboratory tests including a comprehensive metabolic panel, complete blood count with differential, and coagulation profile were all within normal limits. Plain film radiography of the chest revealed bilateral cavitating upper lobe lesions. The patient was taken to the operating room for a direct laryngoscopy, rigid esophagoscopy, rigid bronchoscopy, and biopsy (Figure 2). Findings on intraoperative examination included a friable right cricoarytenoid complex and false vocal cord with ecchymotic changes. Both vocal cords featured friable fullness in the posterior aspects as well. Pathology of the biopsied tissue revealed extensive necrotizing granulomatous inflammation. Special stains were positive for acid-fast bacilli. The case of tuberculosis was reported to infection control and the patient was admitted to an isolation room and started on an anti-tuberculosis regimen. Her family was advised to undergo evaluation for TB exposure as well. The lesions and hoarseness cleared up over following 2 months.

REFERENCES


Figure 1: Flexible fiberoptic examination showing fullness of the bilateral false vocal cords and mucosal irregularity

Figure 2: Direct laryngoscopy showing friable lesions involving cricoarytenoid complexes and true and false vocal cords.