Original Report

Laryngeal tuberculosis: an often forgotten diagnosis

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Objective: Clinical description of laryngeal tuberculosis.

Methods: Clinical case review.

Results: The authors report three cases of laryngeal tuberculosis with lung involvement in HIV-negative patients; symptoms were mostly laryngeal. Diagnosis was made in all cases through laryngeal biopsy and examination of the sputum. Patients fully recovered after being given standard antituberculosis therapy.

Conclusions: Laryngeal tuberculosis almost disappeared after the 1950s, but, concomitant with the increase in pulmonary forms, may still be found and, being uncommon, is often misdiagnosed.

Int J Infect Dis 2003; 7: 129–131

INTRODUCTION

Laryngeal tuberculosis currently accounts for almost 1% of all cases of tuberculosis, compared to 25% in the first decades of the 20th century, when it was among the most common laryngeal pathologies. The number of laryngeal tuberculosis cases in industrialized countries has been on the decline in recent decades, after the introduction of antituberculosis therapy, improvements in living standards, and widespread prevention programs. This trend has been dramatically reversed in the past few years, largely owing to the increase in pulmonary tuberculosis, which is, in turn, due to HIV, the increase in immigrants at risk, poor living standards and malnutrition—especially in the elderly—and the appearance of mycobacterial strains resistant to the common antitubercular agents.[1,2] In our area, tuberculosis is a low endemic infection among native people; the substantial increase in the number of TB cases is exclusively due to non-native people recently coming from high endemic areas, particularly from Sub-Saharan Africa and eastern Europe. Clinical manifestations of laryngeal tuberculosis seem to differ from those described in the past.[3,4] Laryngeal tuberculosis currently affects mostly male adults in their forties and fifties with a history of drinking and smoking to excess. In the pre-antibiotic era, patients were mostly between 20 and 30 years of age. Previously, the mode of infection was direct spread along the airway, and the posterior part of the larynx was most frequently affected, due to the recumbent position enabling pooling of sputum in the posterior larynx, advanced stage of disease, and sputum positivity. Currently, about 6% of cases have no evidence of pulmonary disease, and there are increasingly more lesions in the anterior regions of the larynx, due to hematogenous dissemination of the disease and to outpatient therapy, which reduces the number of bedridden patients. Also, the macroscopic aspect seems to have changed, exophytic lesions being more frequent than ulcerating lesions.[5] The first symptoms to appear may be painful dysphagia, dysphonia and, more rarely, dyspnea, generally associated with more or less obvious signs of pulmonary involvement and other general symptoms.[3] Endoscopy may give an indication of various laryngeal pathologies: laryngeal neoplasm, severe exudative and fibrinous inflammation, chronic laryngitis, and contact ulcer. Diagnosis may be delayed, since laryngeal tuberculosis is rarely taken into consideration in the differential diagnosis. Early diagnosis is important for prompt treatment and to reduce complications to the patient and excessive exposure to health workers.

Description of cases

The authors report three cases of laryngeal tuberculosis in young adults (two males and one female; one foreigner and two Italian people; HIV antibody (EIA) negative in all three cases) in the last 3 years (Table 1). All decided to consult a doctor due to pharyngeal–laryngeal-type symptoms (painful dysphagia, dysphonia, pharyngalgia); the median duration of symptoms was 74 days. Indirect laryngoscopy highlighted in two patients the presence of ulceronecrotic lesions involving the arytenoids and the posterior two-thirds of the false vocal cord with surrounding diffused hyperemia respectively; the

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Table 1. Patient profile

Sex	*Age (years)*	*Country*	*Symptomatology at onset*	*HIV Ab (EIA)*	*Laryngoscopy*	*Chest X-ray*
Male	29	Italy	Pharyngalgia Cough	Negative	Ulcer involving an arytenoid	Left upper lobe macronodular lesions
Female	37	Italy	Dysphonia Cough	Negative	Ulcer involving the false vocal cord	Right upper lobe macronodular lesions
Male	35	Romania	Dysphagia Dyspnea Weight loss	Negative	Pharyngolaryngeal edema with fibrinous exudate	Bilateral upper lobe macro-nodular lesions

situation was more serious in the third patient, with widespread hypopharyngolaryngeal edema and mucus covered by abundant grayish fibrinous exudate (Figure 1). A neck CT scan was also performed on this last patient, and highlighted a widespread uneven thickening

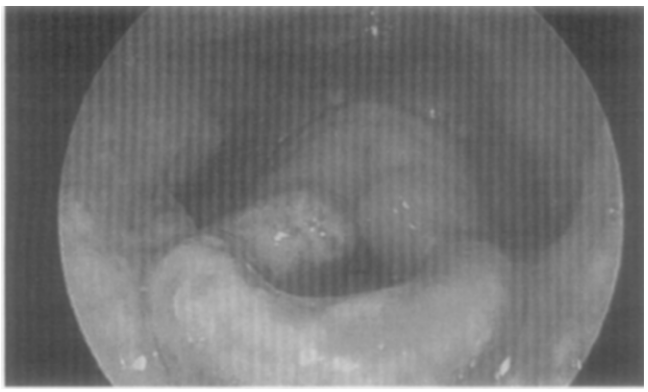

Figure 1. Laryngoscopy: widespread hypopharyngolaryngeal edema with abundant grayish fibrinous exudate.

Figure 2. Neck CT: widespread uneven thickening of the larynx and minute gaseous air formations within it.

of the laryngeal parenchyma and many minute gaseous air formations within it (Figure 2). The chest X-ray showed confluent micronodular and macronodular parenchymal infiltrates in the upper lobes in all three patients. In all cases, the histologic examination pointed to necrotizing chronic granulomatous inflammation, but acid-fast bacilli (AFB) were not seen with Ziehl–Neelsen staining. The AFB sputum smear was positive in all three patients; the three tuberculosis strains were sensitive to all standard drugs. The patients underwent standard antituberculosis therapy (isoniazid+rifampin+ethambutol for 2–3 months, followed by isoniazid+ rifampin for another 7 months), which completely resolved the clinical situation.

DISCUSSION

In modern times, laryngeal tuberculosis, although clinically rare, is being found more frequently as the predominant manifestation of tubercular disease, and is today the most frequent granulomatous disease of the larynx.[6] Between 1998 and 2000, 94 tuberculosis cases were admitted to our hospital; we observed three with laryngeal localization (0.08% of all admissions to the ENT unit). In the previous decade, we did not observe any laryngeal tuberculosis cases. The symptoms in all the patients were laryngeal and severe enough for admittance to the ENT unit. The lungs were also involved in all the patients. Given the modest initial symptoms, the patients were late in consulting the ENT specialist (median duration of symptoms 74 days). The microbiological diagnosis in all cases was made on the sputum, by direct examination for AFB and by culture. The histologic examination showed in all cases a picture of granulomatous inflammation compatible with tubercular infection. It should be noted that no reinforcing factors, such as immunodeficiency, malnutrition, or advanced age, were found, and nor were predisposing factors of a racial type. Our data show how the nonspecific initial symptoms of the disease can create difficulty in the differential diagnosis, as well as causing delays. This type of localization in particular may simulate a laryngeal neoplasm: dysphonia, dysphagia and dyspnea, history of drinking and smoking to excess, weight loss, and

indistinguishable macroscopic aspect. Odynophagia should be kept in mind during differential diagnosis between tuberculosis and carcinoma, being less typical of the latter.[3] Neoplastic and tubercular pathologies can sometimes coexist;[7] however, it has been noted that coexistence of laryngeal tuberculosis and carcinoma is exceptional in patients with active pulmonary tuberculosis.[8] Other authors[5–7] have stressed the necessity of considering the possibility of tuberculosis in the differential diagnosis of laryngeal lesions; the symptoms and signs often mimic those of carcinoma, chronic laryngitis, or other granulomatous disease of the larynx. The pharmacologic treatment is the same as for the pulmonary forms, and results are generally excellent. Finally, it should be pointed out that late diagnosis of this highly contagious disease puts health workers and other patients at risk of occupational and nosocomial infection. At a time when the rate of tuberculosis in general, and its laryngeal localization in particular, is on the increase, we consider it important to include this pathology in the scope of the diagnosis of diseases of the larynx, not only when there are clear signs, but also in ambiguous cases, in order to avoid delays in diagnosis.

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