

Laryngeal tuberculosis at the end of the 20th century

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Abstract

Despite the dramatic reduction in the incidence of laryngeal tuberculosis after the 1950s, the topic has now gained new interest due to claims that the disease has changed its clinical pattern. In the past, the typical patient was 20–40 years old with ulcerated laryngeal lesions, perichondritis, and advanced cavitary lung disease. We studied nine cases of laryngeal tuberculosis confirmed by histological examination. The microlaryngoscopy revealed tumour-like lesions and/or chronic non-specific laryngitis. There were no significant ulcerations or signs of perichondritis. The patients' ages ranged from 48.5 years to 69.3 years (mean, 59.4 years). In three of our patients (33 per cent) we did not find any pulmonary involvement, thus suggesting primary laryngeal tuberculosis or haematogenous spread. In conclusion, the numerous physicians who deal with the various laryngeal symptoms and diseases should be aware of the existence of laryngeal tuberculosis and the changing patterns of the disease (at least in the developed countries).

Key words: Larynx; Laryngeal diseases; Tuberculosis

Introduction

At the beginning of the 20th century, laryngeal tuberculosis was the most common disease of the larynx (Thompson, 1924), but, by the 1980s, the disease had become extremely rare in developed countries. This decline might very well be attributed to the following causes: a) the invention and employment of chemotherapeutic agents; b) the easy access to health systems and preventive programmes; c) the improvement in nutrition and social conditions.

Due to this low incidence of laryngeal tuberculosis the related literature became limited. However, during the last decade, the topic has gained new interest for three main reasons: a) most of young and middle-aged physicians do not consider tuberculosis in the differential diagnosis of various laryngeal symptoms resulting in misdiagnosis and wrong treatment; b) the claim that the disease has changed its behaviour (regarding the patients' average age, the site and the type of the lesions, the presence of concomitant pulmonary tuberculosis); c) the fact that autoimmune deficiency syndrome (AIDS) and other immunosuppressive diseases or treatments have already increased and will further increase the incidence and spectrum of tuberculosis.

Materials and methods

We studied nine cases of laryngeal tuberculosis that were admitted to our department for investiga-

tion of persistent laryngeal symptoms. In all patients, before admission, indirect laryngoscopy had revealed tumour-like lesions and/or chronic laryngitis. Microlaryngoscopy and subsequent histology led to the diagnosis of laryngeal tuberculosis.

All patients were men with a long history of tobacco abuse. The ages ranged from 48.5 years to 69.3 years (mean, 59.4 years).

The evaluation of the patients consisted of a thorough history and clinical examination, general blood and urine tests, chest X-rays with tomographies, sputum cultures and the purified protein derivative test (PPD or Mantoux test).

Results

The history revealed that symptoms encountered, in order of frequency, included hoarseness (nine cases, 100 per cent), sensation of foreign body in the larynx or pharynx (nine cases, 100 per cent), dysphagia (six cases, 66.5 per cent), cough (five cases, 55 per cent), odynophagia (four cases, 44 per cent), weight loss (four cases, 44 per cent), and dyspnoea (two cases, 22 per cent). The duration of hoarseness (the main symptom that led the patients to the ENT surgeon) was in all patients less than six months.

Two of our patients (22 per cent) had had a positive history of pulmonary tuberculosis in the past and seven (78 per cent) had no history of tuberculosis.

TABLE I
SITE OF LESION AND RESULTS OF CLINICAL TESTS

Patient no.	Age	Site of lesion	SC	X-ray	PPD	History	Histology
1.	49	Posterior part true vocal fold	+	+	-	-	+
2.	61	Posterior part true vocal fold	-	-	+	-	+
3.	63	Posterior part true vocal fold	+	+	+	-	+
4.	57	Interarytenoid space	+	+	+	+	+
5.	52	Interarytenoid space	+	+	+	+	+
6.	69	Epiglottis	-	-	+	-	+
7.	66	Epiglottis	+	+	+	-	+
8.	60	Posterior part true vocal fold	-	+	-	-	+
9.	57	Posterior part true vocal fold	-	-	+	-	+

SC = Sputum cultures

PPD = Purified protein derivative test (PPD or Mantoux test)

Microscopy revealed tumour-like lesions and/or chronic non-specific laryngitis. No significant ulcerations were seen. Table I illustrates the site of the lesion and the results of the tests.

Discussion

At the end of the 20th century, tuberculosis has taken the world several decades backwards, as in 1993, it was declared a global emergency, having become again the world's leading cause of death from a single infective agent (Godlee, 1993; Nakajima, 1993). The most probable reasons for this resurgence of tuberculosis are: a) the wide epidemic spread of human immunodeficiency virus (HIV) worldwide; b) the rising population of young people (a common disease target); c) bad living and nutritional conditions, most often in ethnic minorities in cities with a high prevalence of unemployment and substances' abuse; d) mycobacterial strains with rising resistance to the most available chemotherapeutic agents.

This rising incidence of tuberculosis affected not only the developing countries but also the developed ones. Since 1987, after a declining incidence for decades in England and Wales, tuberculosis has shown again a worrying steady increase. Moreover, extrapulmonary manifestations of the disease have affected 15–40 per cent of certain populations or areas in the United Kingdom (Spence *et al.*, 1993; Williams and Douglas-Jones, 1995). Therefore, laryngeal tuberculosis, which was anecdotal 20 years ago in the developed countries, now is encountered by an ever-increasing number of otolaryngologists. As a consequence, laryngeal tuberculosis, with its probable new and different patterns, must be included and emphasized in the educational programmes of otolaryngology.

In the past, the typical patient with laryngeal tuberculosis was 20–40 years old with advanced cavitary lung disease (Swallow *et al.*, 1994). However, our patients' ages ranged from 48.5 years to 69.3 years (mean, 59.4 years). This shift to older ages is in agreement with the results of other studies in the developed world (Scully *et al.*, 1983; Levenson *et al.*, 1984; Couldery, 1990; Swallow *et al.*, 1994). However, the number of patients in these studies is usually very small (case reports), and the number of

patients (nine) in the present study is one of the largest in the recent literature.

It was very interesting to note that three of our patients (33 per cent) had negative radiological examinations of the chest, negative sputum cultures, and negative history. Therefore, we can assume that these cases concern either primary laryngeal tuberculosis or haematogenous spread from an unidentified source in the body.

All patients had a tumour-like lesion and/or chronic laryngitis. No significant ulcers or perichondritis could be found (typical of laryngeal tuberculosis in the past). This is another change in the clinical pattern of laryngeal tuberculosis. Although an ulcerated larynx can still be encountered (Tong and Van Hasselt, 1993), the balance of the recent literature suggests that in the majority of cases the lesion is hypertrophic or even exophytic (Rupa and Bhanu, 1989; Swallow *et al.*, 1994; Singh *et al.*, 1996). The danger of misdiagnosis of laryngeal tuberculosis as laryngeal cancer is evident. However, we should also have in mind that these two diseases may co-exist.

In the majority of our cases (78 per cent), the site of the lesion was in the posterior part of the larynx. In the past, laryngeal tuberculosis was described as being sited mainly in the posterior half of the larynx (posterior commissure) (Thompson, 1955). However, the recent literature is controversial. Levenson *et al.* (1984) did not find any predilection for any laryngeal site. Rupa and Bhanu (1989) found the anterior parts of the true vocal folds as the chief areas affected. Singh *et al.* (1996) found five cases with anterior and three cases with posterior laryngeal involvement in eight non-AIDS patients. However, both their two AIDS patients had involvement of the posterior portion of the larynx. This predilection in AIDS patients may be attributed to haematogenous or lymphatic spread, combined with their chronic recumbency.

In two of our cases (22 per cent), the lesion was found at the epiglottis. In the past, epiglottic involvement was rarely seen, except as a late finding in a diffusely diseased larynx (Taylor and Nathanson, 1934). The evidence of this changing pattern of laryngeal tuberculosis is supported by the findings of Singh *et al.* (1996) that one of their eight non-HIV positive patients (12.5 per cent) had the lesion localized at the epiglottis.

Two of our patients had negative PPD tests. Therefore, a negative Mantoux test does not exclude laryngeal tuberculosis as a diagnosis. The negative result may be a consequence of poor technique or that the patient may be in a state of anergy. Moreover, today, in the AIDS era, it is more true than ever that a negative tuberculin test does not rule out tuberculosis infection or active disease (Small *et al.*, 1991).

In conclusion, the numerous physicians (internists, general practitioners, otorhinolaryngologists, pathologists, etc.) who deal with the various laryngeal symptoms and diseases should be aware of the existence of laryngeal tuberculosis and the changing patterns of this disease (at least, in the developed countries).

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