

Laryngeal Tuberculosis Masquerading as Carcinoma

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Chronic hoarseness in a middle-aged patient who smokes tobacco requires a medical work-up to establish the diagnosis. The underlying disease often is laryngeal carcinoma. Two cases that occurred in rural east Texas were initially diagnosed as carcinoma, but after biopsy, were proven to be laryngeal tuberculosis.

Case Reports

A 53-year-old man who worked as a water-well driller complained to his family physician of a 1-week history of hoarseness. He denied other symptoms. Specifically he reported no history of chills, fever, or night sweats. He did have a history of smoking 1 pack of cigarettes per day for the past 35 years. He was given an intramuscular injection of penicillin and a prescription for oral antibiotics. The hoarseness persisted, and another course of antibiotics was prescribed. When his hoarseness continued to persist, he was referred to a local otolaryngologist. By this time, he had developed dysphagia to which he attributed a 10-pound weight loss.

Moniliasis was found during the initial laryngoscopic examination, and the patient was given a prescription for ketoconazole 100 mg/d. No improvement in symptoms occurred. On the second laryngoscopic examination, a granular, raised, gray-white lesion was seen on the right vocal cord. The clinical impression was squamous cell carcinoma. A biopsy, however, revealed a granulomatous inflammation with many bacilli consistent with tuberculosis. In the postoperative period, a chest radiograph showed a left upper lobe infiltrate but no evidence of cavitation. Cultures of sputum samples grew *Mycobacterium tuberculosis*, which had no evidence of resistance to any of the routine antituberculous antibiotics.

This patient could not remember ever having a tuberculin skin test, and no one in his immediate family had ever had tuberculosis. Appropriate antituberculous therapy was prescribed, which was continued for 10 months. During this time his lung lesion cleared, and his symptoms resolved. The patient lived with his wife and one daughter. During the following year neither his wife nor his daughter showed a skin-test conversion from negative to positive, and both remained clinically free of tuberculosis as well. No other close contact of the patient's developed tuberculosis.

The second patient was a 47-year-old woman with a 26-year history of smoking 1.5 packs of cigarettes per day. She complained of a 1-week history of hoarseness and slight cough. Initially the cough was treated with antibiotics, but symptoms persisted. A firm, gray-white, irregular nodule was found on each of the true cords during laryngoscopic examination. The clinical impression was squamous cell carcinoma, but a biopsy specimen showed granulomatous inflammation with large numbers of acid-fast bacilli. A chest radiograph showed a right upper lobe infiltrate with no evidence of cavitation. Cultures were obtained. The organisms were sensitive to the usual therapy, so antituberculosis therapy was prescribed, and the patient was discharged from the hospital.

The patient's symptoms resolved rapidly, and the lung infiltrate cleared during the next several months. This patient could not remember having had a skin test for tuberculosis, had no family history of tuberculosis, and could not remember any source of exposure. Her family was observed during the following year, and skin testing was negative. No conversions occurred, and none of her family members developed clinical tuberculosis during this time.

Discussion

Before effective antibiotic therapy became available, laryngeal tuberculosis was common.¹ In 1924 Sir St. Clair Thompson stated, "There is no specific disease of the larynx as common as tuber-

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culosis." It was frequently a terminal event in patients dying from pulmonary tuberculosis. With appropriate therapy, laryngeal tuberculosis is uncommon, and fewer than 200 cases per year are reported in the United States.^{2,3} The number of cases of laryngeal carcinoma, with 11,900 cases and 4090 deaths in 1995, far exceeds that of laryngeal tuberculosis.⁴ In both of the above cases, the patients were known to have smoked for a sufficiently long duration to place them at increased risk for laryngeal carcinoma.⁵

In the United States today, most cases of tuberculosis are found in urban settings.⁶⁻⁸ Two major population groups are currently at increased risk for tuberculosis: patients with acquired immunodeficiency syndrome (AIDS)^{9,10} and immigrants.¹¹ Both the patients in the above case reports, however, lived in a rural environment, were native-born US citizens, and did not have AIDS. Neither knew how or where the exposure to tuberculosis had occurred. That extensive investigation of both cases never revealed the source of their exposure should not be surprising, because tuberculosis can be acquired from nonintimate contacts. Forty-one persons who frequented a neighborhood bar developed tuberculosis from one fellow bar patron who had active disease.¹² Transmission of tuberculosis from a diseased contact on an airliner has also been known to occur.¹³

Laryngeal tuberculosis has been considered to be highly infectious.¹ In both of the above patients, however, although their biopsies revealed a great many organisms, follow-up of their contacts found no evidence of disease.

It is possible that smoking cigarettes increases the risk of laryngeal tuberculosis in patients with active pulmonary tuberculosis. In both of the above cases the patients smoked heavily, and in a recent review,² 15 of the 16 patients with laryngeal tuberculosis were said to have smoked both chronically and heavily. Hypothetically, increased expectoration of infected sputum could increase the exposure of laryngeal mucosa to the infectious organism. Perhaps this possibility needs to be further explored.

As in these two cases, tuberculosis can occur as an isolated and sporadic event. Chronic hoarseness indicates laryngeal involvement by a causative agent, but to recognize tubercular laryngitis, it must be considered in the differential diagnosis. A chest radiograph of a noncavitary mass would not

be helpful, because the radiograph cannot help distinguish a tumor from tuberculosis. A tuberculin skin test might be helpful; however, cytologic examination of the sputum with acid-fast staining is simple, rapid, and relatively inexpensive. The large numbers of bacilli in the biopsy specimens in the two patients would have resulted in positive findings with cytologic testing. Early diagnosis is important in preventing the exposure of contacts. Tubercular laryngitis should be considered in patients who smoke, are hoarse, and have a pulmonary infiltrate.

Summary

Two patients were cared for during a 3-month period. Both smoked at least 1 pack of cigarettes a day for many years. Both complained of hoarseness, which did not respond to antibiotics and did not resolve with time. In both cases, the initial diagnosis was squamous cell carcinoma of the larynx. Both patients had laryngeal tuberculosis, and when appropriate therapy was instituted, their symptoms and lesions cleared.

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