CASE REPORT

OROPHARYNGEAL AND MILIARY PULMONARY TUBERCULOSIS WITHOUT RESPIRATORY SYMPTOM

Jung Hyun Chang1, Jung Hyun Kim2, Ju Wan Kang3 and Jeong Hong Kim4

1Department of Otorhinolaryngology, National Health Insurance Corporation Ilsan Hospital, Go-yang; 2Beomse Otorhinolaryngology Clinic, Yongin; 3Department of Otorhinolaryngology, Yongin Severance Hospital, Yonsei University Health System, Yongin; 4Department of Otorhinolaryngology, Jeju National University School of Medicine, Jeju, Korea

Abstract. Tuberculosis is an important cause of morbidity and mortality worldwide. We report the case of a 52-year-old man who presented with a two month history of sore throat without other general or respiratory symptoms. Oral examination revealed ulcerative and granulomatous lesions on the soft palate and tonsils. Histological examination of the lesions showed granulomatous tissue with caseous necrosis consistent with tuberculosis. A chest x-ray and computed tomography of the chest showed miliary tuberculosis of both lungs. The oral lesions improved with antituberculous medication by one month. Tuberculosis should be considered in the differential diagnosis of oral lesions which do not respond to appropriate antibiotic therapy. Pulmonary tuberculosis should also be considered in patients with oral tuberculosis even if they do not have respiratory symptoms.

Keywords: oropharynx, tuberculosis, pulmonary tuberculosis

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by bacteria such as My-}

Correspondence: Dr Jeong Hong Kim, Department of Otorhinolaryngology, Jeju National University School of Medicine, 102 Jejudaehakno, Jeju, 690-756, South Korea.
Tel: +82 64 717 1716; Fax: +82 64 717 1029
E-mail: jeonghongkimmd@gmail.com

Dr Ju Wan Kang, Department of Otorhinolaryngology, Yongin Severance Hospital, Yonsei University College of Medicine, 225 Geumhakno, Cheoin-gu, Yongin-si, Gyeonggi-do 449-930, Korea.
Tel: +82 31 331 8736; Fax: +82 31 331 5551
E-mail: kjw002@yuhs.ac

cobacterium tuberculosis (Singhaniya et al, 2011). The prevalence of tuberculosis has decreased over the past few decades (Smolka et al, 2008). However, the incidence of TB has increased recently due to greater numbers of immunodeficient patients and multidrug-resistant strains (Sutbeyaz et al, 2000; Frieden et al, 2003; Kakisi et al, 2010).

One-third of people world-wide are infected with TB (Golden and Vikram, 2005; Kakisi et al, 2010). Two million people die yearly due to tuberculosis (Frieden et al, 2003). Early detection and proper treatment of TB are important. TB commonly presents with pulmonary
manifestations but may infest the head and neck with or without pulmonary TB. Cervical lymphadenitis is the most commonly involved site of the head and neck (Golden and Vikram, 2005), and oropharyngeal tuberculosis is rare (Kakisi et al, 2010). We report a rare case of oropharyngeal tuberculosis associated with asymptomatic pulmonary TB.

**CASE REPORT**

A 52-year-old man was referred from a private clinic to the Otolaryngology Department, Yongin Severance Hospital with a two month history of hoarseness, odynophagia and sore throat. He had no cough, sputum production, hemoptysis, or other respiratory symptoms. He did not have fever, weight loss, night sweats, or other generalized symptoms. He denied a history of other medical problems. He had taken medicine for one month to treat suspected tonsillitis without improvement in his symptoms.

Oral examination revealed diffuse ulcerative and granulomatous lesions on both the soft palate and tonsillar area (Fig 1). He had no palpable lymph nodes in the neck.

Blood chemistry results were normal. His erythrocyte sedimentation rate was elevated at 27 mm/hr (0-20 mm/hr) and his C-reactive protein was elevated at 2.1 mg/dl (0.0-0.5 mg/dl). A biopsy of a lesion was performed which showed chronic granulomatous inflammation with caseous necrosis consistent with tuberculosis (Fig 2A). Ziehl-Neelsen staining for acid-fast bacilli was positive (Fig 2B). A polymerase chain reaction test for *Mycobacterium tuberculosis* was positive. Further examinations of the chest were performed. A chest x-ray (Fig 3) and computed tomography of the chest (Fig 4) showed miliary tuberculosis of both lungs and a 4 cm cavitory lesion with patchy consolidations in the right upper lung. Sputum smears and cultures were positive for acid-fast bacilli. His HIV test was negative.

He was given the diagnosis of oropharyngeal TB with concomitant pulmonary TB. He was treated with isoniazid 300 mg, rifampin 600 mg, pyrazinamide 1,250 mg, pyridoxine 100 mg, and ethambutol 800 mg daily. His oral symptoms improved with medication by one month.

**DISCUSSION**

Pulmonary TB is the most common site of TB; a person usually contacts TB by inhalation of the infective organism. Extrapulmonary TB, such as tuberculous lymphadenitis and pleuritis, are not uncommon and account for approximately 10%-15% of all TB cases (Smolka et al, 2008). However, oral and oropharyngeal tuberculosis are rare, accounting for 0.05%-5% of all TB cases (Singhaniya et al, 2011).
Concurrent pulmonary TB is found in about 50% of patients with oral TB (Kakisi et al., 2010). However, oral TB is not common in patients with pulmonary TB, despite the infective organism passing through the oral cavity in pulmonary TB patients (Singhaniya et al., 2011). This is because the intact oral mucosa acts as a natural barrier and salivary enzymes also function as a defense mechanism (Pekiner et al., 2006). Hematogenous and lymphatic spread are generally suggested as the route of spread to oral and oropharyngeal areas (Sutbeyaz et al., 2000; Singhaniya et al., 2011). However, direct infection is also possible in patients with oral mucosal defects (Singhaniya et al., 2011).

Oral TB has several presentations with ulceration being the most common (55%), followed by swelling (24%) and discharge (10%) (Kakisi et al., 2010). Symptoms of oral TB can be nonspecific. If generalized symptoms, such as weight
loss, persistent fever, malaise, cachexia and night sweats, are not present, it is challenging to diagnose TB without a confirmative study. However, general symptoms of TB are seen in only 37% of cases (Kakisi et al., 2010). Diagnostic delay may be associated with greater morbidity, mortality and transmission. TB should be considered in oral lesion cases that do not respond to treatment. Concomitant pulmonary TB should also be considered in all cases of oral TB. A delay in TB diagnosis is common. Sreeramareddy et al. (2009) found it took an average of two months to diagnose pulmonary TB.

Microscopic examination for acid-fast bacilli using Ziehl-Neelsen staining and mycobacterial cultures of respiratory samples are generally used to diagnose pulmonary TB (Golden and Vikram, 2005). However, biopsy is usually needed to diagnose oropharyngeal TB because conventional acid-fast bacilli staining and TB cultures have a low sensitivity for detecting oral TB lesions: 52% by AFB stain and 50% by culture (Kakisi et al., 2010; Shingadia, 2012). Pathological characteristics of TB, such as caseous necrosis, epithelioid structures, such as Giant or Langhans cells, are helpful for diagnosis of oral TB (Kakisi et al., 2010). Polymerase chain reaction (PCR) also has a good sensitivity (89%-100%) for detecting mycobacteria (Smolka et al., 2008; Kakisi et al., 2010; Shingadia, 2012). Real-time PCR has the advantage of identifying rifampicin resistance and is helpful to choosing the medication regimen. TB strains with rifampin resistance also often have isoniazid resistance (Shingadia, 2012). However, the PCR may fail to detect mycobacterium (Kakisi et al., 2010).

In the patients with oral cavity TB, evaluation of the lungs should be performed. A chest x-ray is commonly used to detect pulmonary TB; radiographic findings, such as upper-lobe infiltrates, cavitary infiltrates, and hilar or paratracheal adenopathy, suggest pulmonary TB (Frieden et al., 2003). However, chest CT may be more useful for detecting early TB lesions and cavitary lesions (Prasad and Bhardwaj, 2012; Shingadia, 2012).

Hematologic malignancies, such as lymphoma, as well as sarcoidosis, syphilis and Wegner’s granulomatosis, should also be considered in the differential diagnosis of chronic ulcerative oral disease (Frieden et al., 2003; Smolka et al., 2008). Evaluation for immunocompromised states, such as HIV infection, is also necessary, especially in patients with extrapulmonary TB, since more than 50% of patients with concurrent HIV infection and TB present with extrapulmonary involvement (Golden and Vikram, 2005).

Anti-tuberculous medication for six to nine months is recommended as
Oral and pulmonary tuberculosis

Tuberculosis is a major public health concern worldwide. The standard treatment for extrapulmonary TB usually involves a two-month course of isoniazid, rifampin, pyrazinamide, and ethambutol, followed by four to seven months of isoniazid and rifampin, which is effective except in cases suspected to be resistant to the first-line drugs (Golden and Vikram, 2005; Kakisi et al., 2010). Oral TB lesions and symptoms improve with TB medication within two to eight weeks (Frieden et al., 2003; Smolka et al., 2008; Singhaniya et al., 2011).

In conclusion, oropharyngeal tuberculosis should be considered when chronic oral lesions do not respond to routine medical therapy. The possibility of concomitant pulmonary TB should also be considered in patients with oral TB, even if the patient does not have generalized or respiratory symptoms.

REFERENCES


