CASE REPORT

OROPHARYNGEAL AND MILIARY PULMONARY TUBERCULOSIS WITHOUT RESPIRATORY SYMPTOM

Jung Hyun Chang[1], Jung Hyun Kim[2], Ju Wan Kang[3] and Jeong Hong Kim[4]

[1]Department of Otorhinolaryngology, National Health Insurance Corporation Ilsan Hospital, Go-yang; [2]Beomse Otorhinolaryngology Clinic, Yongin; [3]Department of Otorhinolaryngology, Yongin Severance Hospital, Yonsei University Health System, Yongin; [4]Department 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 caseaous 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 *Mycobacterium 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

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

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 of 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 caseaous 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

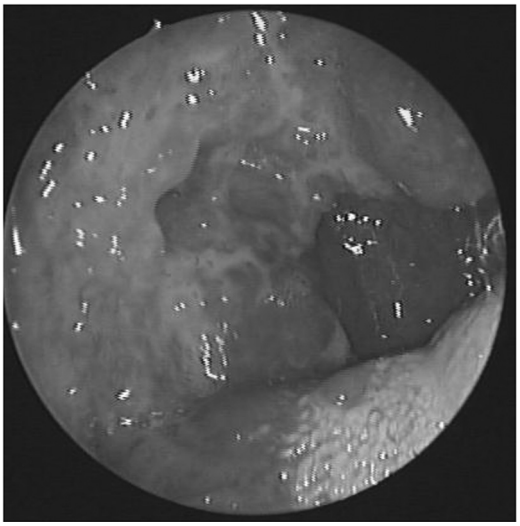

Fig 1–Diffuse ulcerative and granulomatous lesions of the soft palate and tonsils.

of both lungs and a 4 cm cavitary 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).

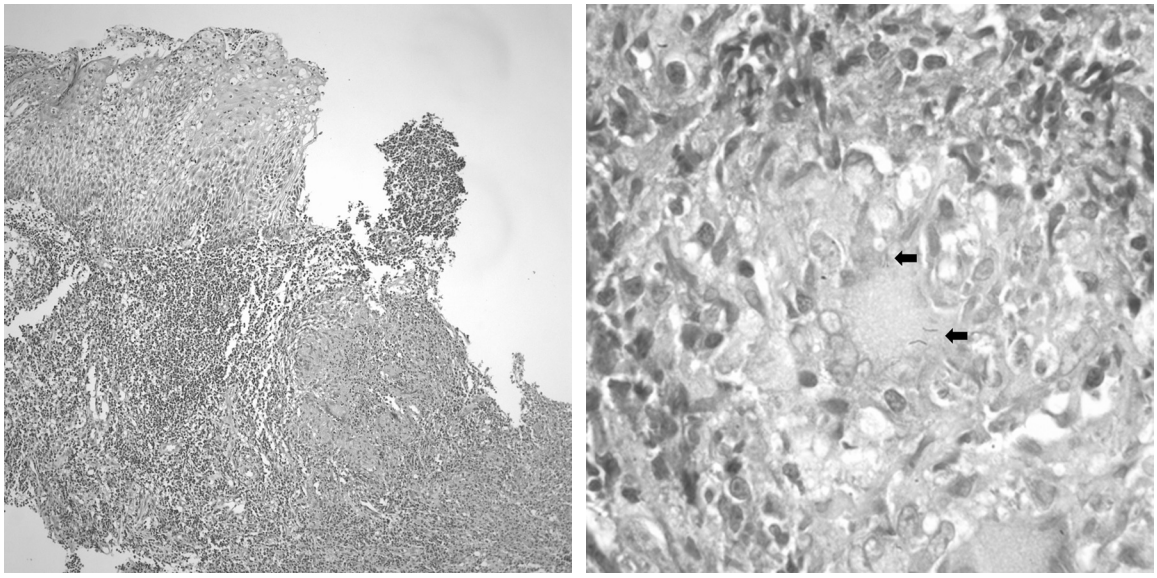

Fig 2–A. Granuloma with a multiple lymphocytes and caseating necrosis and multinucleated Langerhans giant cells. B. A Ziehl-Neelsen stain showed acid-fast bacilli (arrow).

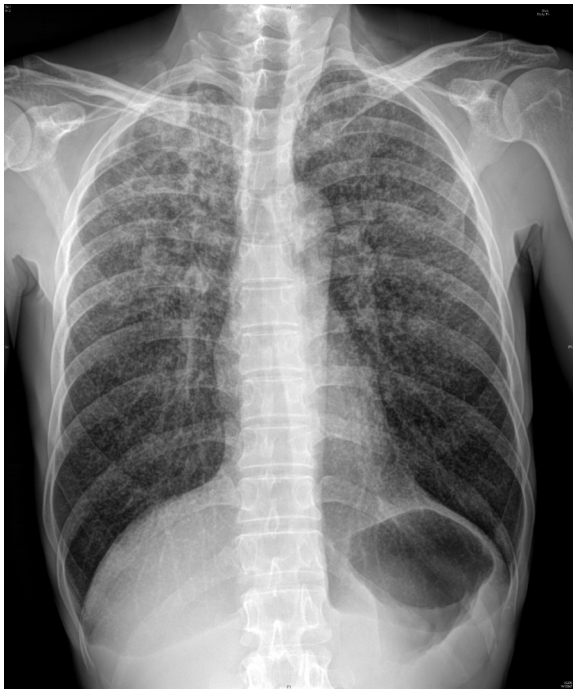

Fig 3–Miliary tuberculosis of both lungs. A cavitary lesion and patchy consolidations are seen in the right upper lung.

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

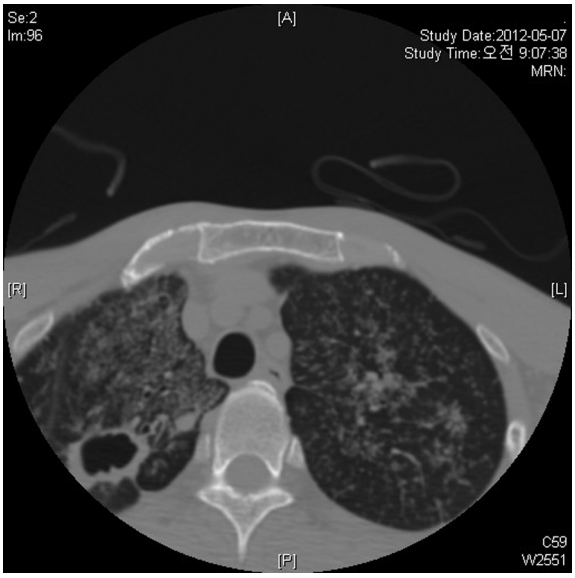

Fig 4–Miliary nodules with a cavitary lesion in right upper lung.

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

treatment for extrapulmonary TB. Usually, two months of isoniazid, rifampin, pyrazinamide, and ethambutol, followed by four to seven months of isoniazid and rifampin, 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.

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