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Case Report

Co-existence of pulmonary, tonsillar and laryngeal tuberculosis

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Abstract. A 56-year old male applied to otorhinolaryngology clinic with sore throat and dysphagia. During direct examination, ulcero-vegetative lesions were found in the left palatine tonsil and tonsil plicas. In the indirect laryngoscopy, ulcero-vegetative lesions were also observed in some regions of the larynx and epiglottis, Because of the suspicion of laryngeal carcinoma and metastasis, punch biopsy of the left palatine tonsil was performed. Chest X-ray and computerized tomography of the thorax revealed two adjacent cavitations in the apico-posterior segment of the left upper lobe. In the histopathologic examination of biopsies, granulomatous necrosis including caseification necrosis structures that proved tuberculosis was observed. In the fiberoptic bronchoscopic analysis, endobronchial lesion was not detected. Acid-fast bacilli were determined in sputum and bronchial lavage in microscopy and culture. The case of this middle aged male patient; with co-existence of tonsillar, laryngeal and pulmonary tuberculosis presents the clinical significance of upper airway tuberculosis in terms of its infectiousness and rare occurrence.

Key words: Pulmonary tuberculosis, tonsillar tuberculosis, laryngeal tuberculosis

1. Introduction

In recent years, tuberculosis has become again a major health problem. Although, it is located mostly in lung, it can also be found, not infrequently, extra-pulmonary regions (1,2). Upper airway tuberculosis is usually considered to be secondary to pulmonary tuberculosis; however, it can also sometimes develop alone (3). We present a case of co-existence of tonsil, larynx, and pulmonary tuberculosis that is rarely seen and that may mimic tonsillar and laryngeal carcinoma.

2. Case report

A 56-year old male presented with a two-month-history of sore throat, progressive painful dysphagia, fatigue, night sweats, and loss of weight applied to our out-patient clinic. He had no previous history of chronic cough or other chest symptoms. He has been smoking 50 pack-year. There was no relevant past or family history, and no history of contact with tuberculosis.

Patient's physical examination and general appearance were slightly cachectic. On the examination of the throat, increased mucoid secretion was observed in the mouth, and ulcero-vegetant lesions were seen at left tonsil and its plicas (Figure 1a). Ulcero-vegetant lesions were also observed in some regions of the larynx including arytenoid and epiglottis at indirect laryngoscopy. Mucosal necrotic ulcerative area was detected at vallecular zone on the right side of epiglottis (Figure 1b, c). A lymphadenopathy with a size as 1x1.5cm was detected at left superior cervical zone. On lung examination bronchial breathing was detected at the upper zone of the left lung, and fine crackles at bilateral middle zones, prominently at the middle zone of the left lung.

On the laboratory examination, hemoglobin was 13.1g/dL, blood leukocyte count 6470/mm^3, and erythrocyte sedimentation rate within the first hour 72mm. Serum chemistry and urinalysis

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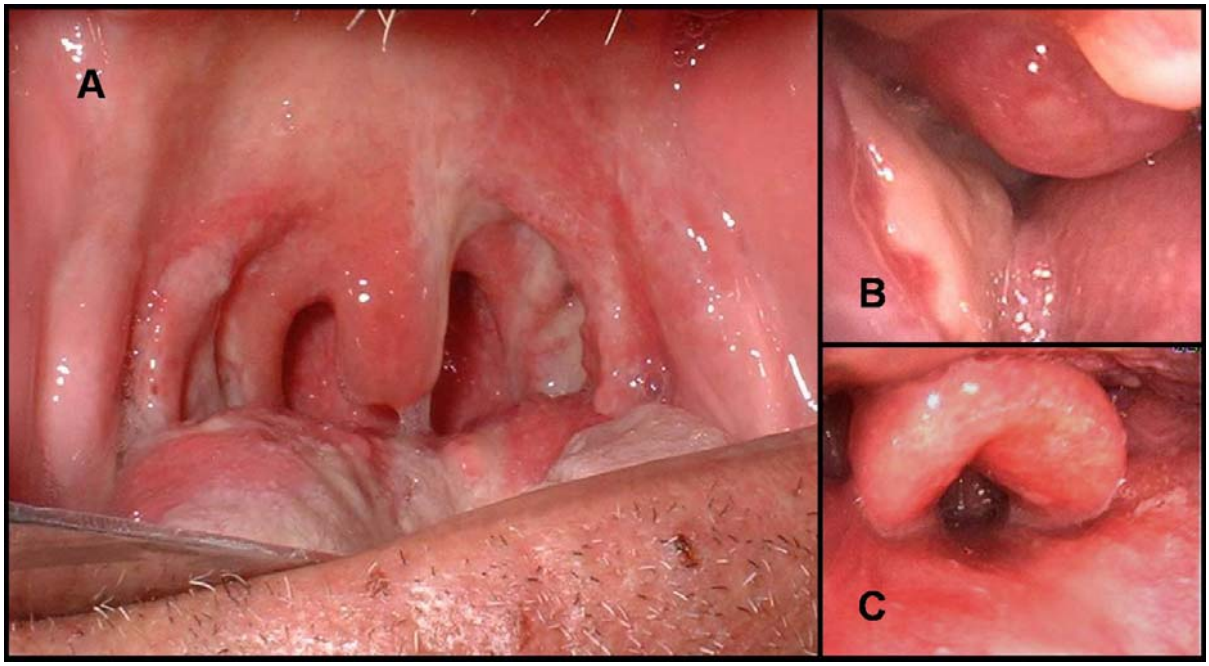

Fig. 1. Increased mucoid secretion in the mouth, and ulcero-vegetant lesions at left tonsil and their plicas (1a). Mucosal ulcerative area detected at right vallecular zone and at the epiglottis (1b,c).

were normal. Both BCG vaccine scar and tuberculin skin test were negative. Thorax computed tomography (CT) revealed 2 cavitary lesions with millimetric sizes surrounded by infiltration areas at apico-posterior segment at left lung, and widespread nodular infiltrations at both lungs (Figure 2a, b). On the fiberoptic bronchoscopic analysis, endobronchial lesion was not detected. Abdominal ultrasonography was normal.

In the differential diagnosis traumatic ulcers, aphthous ulcers, hematological disorders, Human immune deficiency virus infection, toxoplasmosis, actinomycosis, syphilis, midline granuloma, Wegener's disease and malignancies were excluded.

The direct smear and culture of bronchial lavage fluid and sputum were strongly positive for acid-fast bacilli. Nevertheless, cytologic examinations of the bronchial lavage fluid and sputum were normal. Because of suspicion of malignancy, a punch biopsy of the right tonsil was performed. In the histopathologic examination of biopsies from the tonsil, granulomatosis necrosis including caseification necrosis was seen. These granulomas consisted of epitheloid histiocytes, lymphocytes, fibroblasts and Langhans cells (Figure 3).

The patient was diagnosed as tonsillar, laryngeal, and miliary tuberculosis by the help of these findings, and anti-tuberculosis treatment was instructed to the patient. We prescribed a four-drug regimen of Isoniazid (INH, 300mg), Rifampicin (RIF, 450mg), both for 6 months, and Ethambutol (EMB, 800mg) and Pyrazinamide (MPZ, 1500mg) both for the first 2 months.

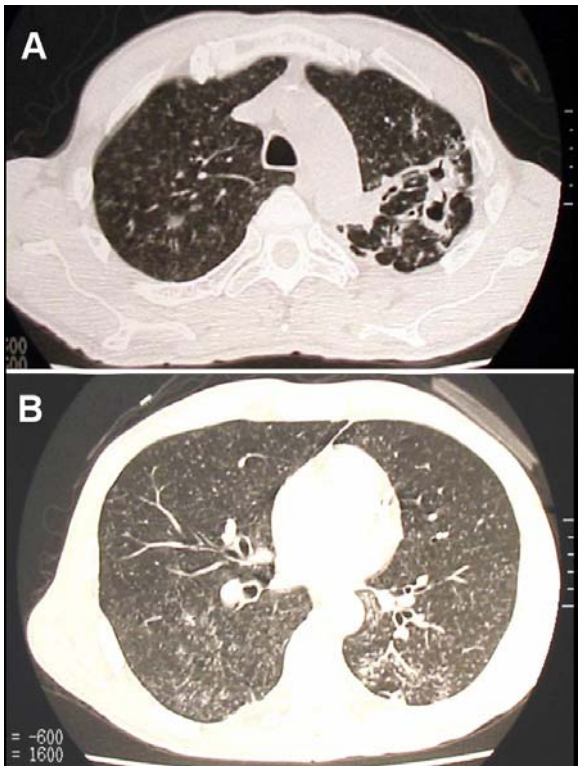

Fig. 2. CT showing cavitary lesions and widespread nodular infiltrations at both lungs.

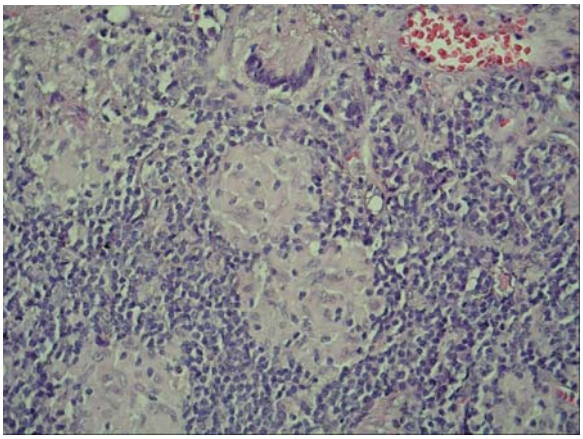

Fig. 3. Sectional image of granulomatosis inflammation including caseification necrosis besides tonsil tissue. Hematoxylin-eosin. Original magnification x 200.

3. Discussion

Upper airway tuberculosis cases decreased since the introduction of effective anti-tuberculosis medications. Upper airway tuberculosis involves the infection of oral cavity, tonsils, tongue, nose, epiglottis, larynx and pharynx (4-9). The frequency of laryngeal tuberculosis was 30-40% of all tuberculosis cases before the introduction of effective chemotherapy, and decreased to 0.6-1.4% once the effective chemotherapy was applied (10,11).

Tonsillar and laryngeal tuberculosis are more common in men and smokers. Chronic pulmonary disorders such as anthracosis and malnutrition factors are predisposing the disease. Hoarseness and dysphagia are the most common symptoms of the disease. Symptoms such as cough, sputum, weight loss, and night sweating may accompany the disease (12). Our case with pulmonary tuberculosis included the coexistence of laryngeal and tonsillar involvement. Our case included predisposing factors for the laryngeal and tonsillar tuberculosis, such as age, gender, and history of smoking. Our case included all of the symptoms because of the involvement of the lungs, larynx, and tonsil. The macroscopic appearance of the laryngeal or tonsillar tuberculosis is not typical. The lesions usually present as mucosal hyperemia and edema, painful ulcers, or masses that may occasionally obstruct the airway. Thus, laryngeal tuberculosis is known as “great imitator” (13). Tonsillar and laryngeal tuberculosis may cause difficulties in differential diagnosis since they have similar clinical and macroscopic appearances with tonsillar and laryngeal malignancies, as they had in our case. Showing *Mycobacterium tuberculosis* bacilli in the smear of sputum, or culturing the bacilli may not be adequate for diagnose in such circumstances. For diagnosis, typical granulomas in the langhans giant cells that are under the epithelium with the ulcers must be shown (13,14).

The clinician should remain alert to the possibility of tuberculosis especially in older patients and in developing countries where the incidence of tuberculosis is high. At first laryngeal carcinoma was considered to be the proper diagnosis since the patient applied to our clinic with the symptoms reminding us upper respiratory tract infections. Observing ulcero-vegetant lesions at left tonsil and its plicas on examination was the other signs reminding us the probability laryngeal carcinoma. Because of the chest X-ray reminding the probability of pulmonary tuberculosis, we first employed the diagnostic methods of tuberculosis. Bacteriological positivity was succeeded. Nevertheless, doubts faced at inspection and laryngoscopic evaluation necessitated the histopathologic examination of tonsillar biopsy. As the result of the histopathologic examination of tonsillar biopsy the patient was reported to be tonsillar tuberculosis. And in this context, the diseases that may accompany tuberculosis were excluded. The existence of laryngeal tuberculosis does not necessitate any alteration at the management of tuberculosis (10). Our case received a treatment modality including INH-RIF-MPZ-EMB.

The case was presented because the co-existence of tonsil, larynx, and pulmonary tuberculosis, that is rarely seen, may mimic tonsillar and laryngeal carcinoma.

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