

# Tuberculosis of oral mucosa

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**ABSTRACT:** *Tuberculosis of oral mucosa. A. Çakan, Z. Mutlu, A. Özsoz, A.E. Erbaycu, T. Ünal, B.Ö. Koyuncu.*

In secondary tuberculosis, lesions of the oral cavity may accompany lesions of the pharynx, lungs, lymph nodes or miliary tuberculosis. A 35-year-old male was suffering from swelling of his right cheek, cough, weakness and weight loss. There were local hyperemia and irregular oral mucous in the inner part of the right cheek. Chest x-ray showed bilateral nodular opacifications and a cavity of 2 cm. Acid-fast bacteria were present in sputum and

Lowenstein-Jensen culture was positive. The pathological signs of the biopsy taken from the buccal mucosa including multistratified squamous epithelium were: tubercle structure, Langhans' giant cells and minimal caseation necrosis. After anti-tuberculous chemotherapy oral and pulmonary lesions were almost in remission.

Following this case report of lung tuberculosis accompanied by tuberculosis of oral mucosa, the literature related is reviewed.

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## Introduction

Tuberculosis is a systemic disease of world-wide distribution. The incidence of disease is currently decreasing in developing countries. Ninety-five percent of patients with tuberculosis live in developing countries, and in Turkey the disease is still wide-spread. The improvement in anti-tuberculosis chemotherapy and implementation of public health campaigns are causes of this decrease.

The incidence of oral tuberculosis in the pre-antibiotic era was less than 1% that of pulmonary tuberculosis. This incidence declined further with the introduction of antituberculous drugs [1,2]. Primary tuberculosis affects mostly young people while secondary tuberculosis is seen in elderly patients. In secondary tuberculosis, lesions of the oral cavity may be seen simultaneously with lesions of the pharynx, lungs, lymph nodes or miliary tuberculosis [3, 4].

A case of lung tuberculosis accompanied by tuberculosis of oral mucosa is here reported, followed by a review of the related literature.

## The case

A 35-year-old male had reported to dentists several times with a complaint of swelling on the right cheek for one year and coughing, weakness, and weight loss for 4 months. The buccal mucous biopsy taken at the Faculty of Odontology of the Aegean University was found to have tuberculosis. Lesions were clearly visible on the lung x-ray, and the patient was hospitalized in our clinic. At the

physical examination, the patient's general condition was good; a swelling on the right cheek and 1x1 cm submental and 1x1 cm submandibular immobile lymphadenopathy were present.

Other systemic findings were normal. Sedimentation rate was 100 mm/hour, leukocyte count was 9800/mm<sup>3</sup>, hemoglobin was 11,8 gr /dl, hepatitis C virus antibodies (anti-HCV) and human immune deficiency virus antibodies (anti-HIV) were negative. Routine biochemical blood tests and urinalysis showed no change. Multiple sputum examinations were negative for acid-fast bacteria.

We performed bronchoscopy to have sufficient, specific material. Bronchoscopic examination showed local hyperemia and irregular oral mucous in the inner part of the right cheek (figure 1); the

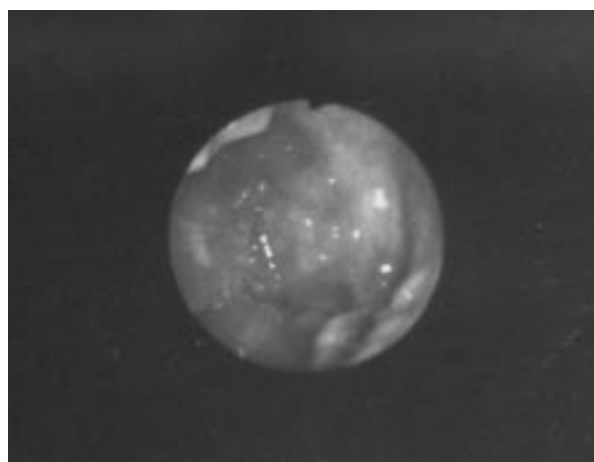


Fig. 1. – White lesions with bright surface on the oral mucosa.

bronchial system was normal. Biopsy material was taken from the same lesion of the oral mucosa. Acid-fast bacteria were present in post-bronchoscopic sputum and growth of mycobacteriae was positive in Lowenstein-Jensen culture. Pathological signs of the biopsy including multistratified squamous epithelium were: tubercle structure, Langhans' giant cells and minimal caseation necrosis (figure 2).

On chest x-ray, hyperdense areas with heterogeneous diffuse linear images in the upper parts of the lungs and a 2x2 cm cavity superimposed on the third frontal costa of the left lung were present (figure 3). On the computerized tomography, bilateral opacifications in the upper lobes, a 2 cm cavity with a regular border in the superior segment of the left lower lobe and nodular opacity on the same segment and of the same size were present.

No non-pasteurized milk ingestion was mentioned in the patient's medical history. When the patient had gone to the dentist due to swelling of the cheek, he was diagnosed as having tuberculosis of the oral mucosa by histopathological examination of the mucosal biopsy. He was evaluated as a case of secondary oral mucosa tuberculosis following lung tuberculosis. An initial therapy of isoniazid 300 mg/day, rifampin 600 mg/day, pirazinamid 2 gr/day and streptomycin 1 gr/day for two months and follow-up therapy of isoniazid 300 mg/day, rifampin 600 mg/day for four months were administered. After anti-tuberculous therapy, oral and pulmonary lesions were almost in remission. At the end of the therapy, there were bilateral linear densities, but they were mostly on the left upper zone on chest radiography. There were no residual lesions in the oral cavity.

### Discussion

Tuberculous lesions of the oral cavity are rare. Their incidence is 0.05-3.65% among patients with tuberculosis [5]. This rate is 20% in most post-mortem examinations [3]. Lesions may be on the mucosa, tongue, tonsils, salivary glands, soft and hard palate, gingiva and uvula. Primary disease is reported in only a few cases. Primary inoculation is rare compared to secondary. In most cases, le-

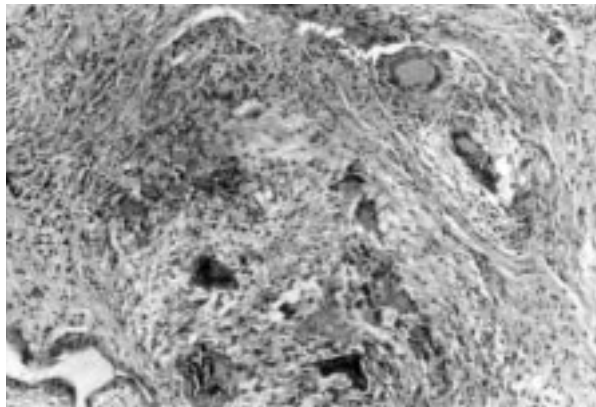


Fig. 2. – Langhans' giant cells and caseation necrosis on the tubercles formed by epithelioid histiocytes

sions may be present on any part of the body, mostly on the lungs [4]. Also some cases without pulmonary disease have been reported [5].

Even though the mechanism of primary inoculation of the oral mucosa is not clear, it is thought that microorganisms invade via small abrasions [4]. Under normal conditions the bacteria cannot invade mucosa because of the body's natural resistance. Erosions or abrasions due to any trauma damage the natural barrier and facilitate the invasion of microorganisms. Extraction of teeth, periodontal diseases, improper oral care and irritations for various other reasons prepare the ground for implantation [3, 4]. Lesions of the oral cavity are swelling of the lips, tumor-like lesions, painful ulcers, nodules, granulomas, or chronic inflammation of gingiva. Occasionally enlargement of the cervical lymph nodes may be seen [3, 4]. Parotitis due to tuberculosis has also been reported [6]. Lesions of the oral cavity may spread to the jaw bones resulting in tuberculosis osteomyelitis [7], oral fistula of cheek [2]) or cause tuberculosis localized to the maxillary sinus.

Diagnosis is made by histologic examination of the biopsy material or smear taken from the mucosal lesions [8]. In cases where the tongue is involved, mycobacterium may grow in saliva [9]. Because of the invasion of bacteria, primary mucosal tuberculosis is mostly seen in children and adolescents [10]. Mostly, the infectious agent is bovine type mycobacteria. Lesions relative to these bacilli may be present on the tongue, bones or joints. Submandibular or cervical lymph nodes may be infected without any lesions in the oral mucosa. In such cases, diagnosis is made only by histopathological examination of the lymph node [3]. Contamination by *Mycobacterium bovis* is via ingestion of uncooked non-pasteurized milk. PANDE *et al.* have reported primary oral lingular tuberculosis due to ingestion of uncooked and non-pasteurized milk [11]. DIMITRAKOPOULOS *et al.* mentioned two similar cases [3]). SELIMOGLU *et al.* diagnosed tonsillitis of primary tuberculosis with tonsillectomy performed for suspected malignancy

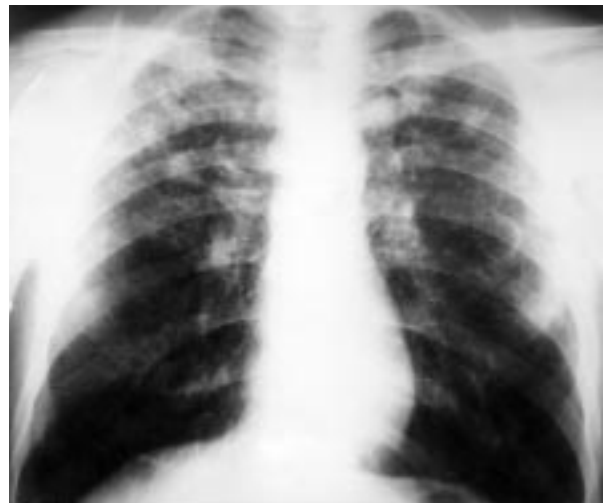


Fig. 3. – Diffuse bilateral infiltration and cavity of the left lung on chest x-ray.

[12]. VOLPE *et al.* reported tuberculosis of oral mucosa due to the *Mycobacterium avium* intracellulare, in a patient with acquired immunodeficiency syndrome (AIDS) [13]. AVDONINA *et al.* reported 113 cases with periodontal infection foci and lung tuberculosis [14]. Lesions were found to be related to productive tuberculosis inflammation. Their findings suggest that periodontal foci of infection in patients with tuberculous periodontitis is a form of extrapulmonary tuberculosis.

For the differential diagnosis, tumors, sarcoidosis, syphilis, mycotic infections, stomatitis and foreign body granulomas should be considered [2, 4].

Tuberculosis chemotherapy is very successful in the treatment of oral cavity tuberculosis [9, 15]. REMISZEWSKI *et al.* reported total remission after six weeks of four drug therapy for cases with lingular tuberculosis where diffuse lung lesions were also present [9]. MATSUMATA *et al.* have reported remission after 5 months of anti-tuberculosis therapy in lung tuberculosis cases with secondary invasion of the oral mucosa, cervical lymph nodes and maxilla [15]. KASHIWAGI *et al.* have diagnosed oral mucosa tuberculosis from the granulation tissue of the mucosa of a spontaneously fallen painful tooth by histologic examination of the smear and biopsy material [8]. Being a case of bilaterally diffuse multicavitary lesions, in the chest x-ray the patient had no granular oral structure and sputum were negative for acid fast bacteria after chemotherapy.

In our case, non-pasteurized milk ingestion was not mentioned in the patient history. The patient was diagnosed as having tuberculosis of the oral mucosa by histopathological examination of the mucosal biopsy and lung tuberculosis by radiology and bacteriology. After anti-tuberculosis therapy, oral and pulmonary lesions were almost in remission and the patient was discharged with improvement of symptoms.

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