

# A Rare Location: Actinomyces in Tongue

## Çok Nadir Bir Yerleşim : Dilde Aktinomiçes

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### Öz

Aktinomikozis, kültürde zor üretilen gram pozitif anaerobik bir bakterinin neden olduğu kronik süperatif bir enfeksiyondür. Sıklıkla servikofasial, respiratuar ve gastrointestinal sistemden izole edilmektedir. Servikofasial yerleşimli olanlara sıklıkla maksillafasiyal travma ve diş manipulasyonu eşlik etmektedir. Çalışmada, 45 yaşında bayan hasta travma, dental girişim ve aile öyküsünde anlamlı bulgu olmayan aktinomiçes vakası sunulmaktadır.

**Anahtar Kelimeler:** aktinomiçes, dil, nadir

### Abstract

Actinomyces is a chronic suppurative infection caused by Gram positive anaerobic bacteria which grows hardly in bacterial culture. It is commonly isolated from cervicofacial, respiratory, and gastrointestinal system. Its exact pathogenesis is still unknown. Actinomyces located in the cervicofacial region is frequently accompanied by maxillofacial trauma and dental procedures. Herein, we report a 45-year-old female case of actinomyces in tongue which was treated with antibiotherapy and good oral hygiene.

**Keywords:** actinomyces, tongue, rare

## INTRODUCTION

Actinomyces is a chronic suppurative infection caused by Gram positive anaerobic bacteria which grows hardly in bacterial culture (1). The most common type is Actinomyces Israelii, but rare species such as A. naeslundii, odontolyticus or viscosus can also cause the disease. It is a commensal microorganism which is independently present in the nature and the etiology of the disease is almost endogenous (1,2). It is commonly isolated from cervicofacial (50%), respiratory (17%), and gastrointestinal system (23%) (2). Actinomyces located in cervicofacial region is frequently accompanied by maxillofacial trauma and dental procedures. The lesions in this region appear as purplish, purulent running lesions with a central necrotic area (2,3).

The location of actinomyces infection on tongue is very rare and it constitutes less than 3% of all cases of actinomyces (3).

Herein, we report a female case of a painless mass covered with mucosa on the anterior 2/3 of the tongue without a history of trauma.

## CASE REPORT

A 45-years-old female patient was admitted to our clinic with a complaint of a painless mass on tongue

which gradually increased in size within the past three months. There was no history of trauma and dental procedure and there was no significant finding in the family history.

On intraoral examination, a uniformly bounded, swollen, painless mass of 12x14 mm in size without ulceration and which is covered with normal mucosa of tongue was detected. There was no limitation of movement in tongue (Figure 1). There were no cervical lymphadenopathy and laboratory abnormalities.

A written informed consent was obtained from the patient and she was operated under local anesthesia. The mass was excised and pathologically examined (Figure 2). The result of pathological examination was reported as actinomyces mycetoma. The patient was administered antibiotic treatment with penicillin and she was recommended to take care of a good oral hygiene. At one and three months and one year of follow-up, no recurrence was observed.

## DISCUSSION

Actinomyces is a chronic granulomatous disease caused by Gram positive microaerophilic bacteria in the actinomyces genus (1,2). The most common etiological agent was demonstrated to be A. Israelii (2). It can also result from secondary to trauma



**Figure 1.** Appearance of the tongue.

in regions with poor hygiene, particularly in oral mucosa, tooth cavity and tonsillar crypts. There are also respiratory, gastrointestinal, and female genital system localizations (1-3).

Pathogenesis of actinomyces has not been exactly explained yet. The organism cannot directly penetrate the healthy tissue; therefore, mucosal damage is necessary for being invasive. By destructing the healthy tissue, it develops granulation tissue in an environment rich in vascular structures and in an anaerobic environment (3,4). It can cause development of more than one abscess in small bones and soft tissue lesions and these can form sinus tracts during healing and can reach the surface. In chronic lesions, sulphur granules representing bacterial colonies can be also detected within yellowish purulent discharge (4,5).

Actinomyces typically present with multiple abscess formation and the most common symptoms are swelling and woody stiffness in soft tissue on palpation. This was thought to be caused by formation of dense fibrotic reaction around the necrotic area in the center of the lesion which was demonstrated in histopathological examination. As the clinical symptoms are non-specific, it is often misdiagnosed as a neoplasm. As a result, it is beneficial to perform clinical, radiological, histopathological, and microbiological examinations simultaneously (3-5). In



**Figure 2.** Appearance of mass in tongue.

a study, Dickson-Gonzalez et al. (6) initially diagnosed a lesion located in the upper jaw as a carcinoma; and however, when the biopsy of the lesion was repeated, they reported the pathology as actinomyces infection. Actinomyces in tongue is rare and it constitutes less than 3% of all actinomyces cases (3,6). In a 20-year literature review, Brignall and Gillhooly reported that the number of cases with actinomyces in tongue was only seven. In another study in 2006, it was reported that the number of cases with actinomyces in tongue was not more than 15 (7). This was thought to be caused by histophysiological characteristics of the tongue. Tongue forms an environment which is resistant to bacterial adherence and bacterial growth due to its keratinous mucosa, its parenchyma rich in vascular structures, its large range of motion, and mechanical cleaning properties of salivation (8).

Actinomyces in tongue often localizes in the lateral part of median sulcus, deep to the anterior 2/3 of extrinsic and intrinsic muscles of tongue, and it presents as a mass with moderate pain and slight mobility (9). Dysphagia usually accompanies the pain (4,9,10). However, there was no dysphagia and pain

in our case.

In addition, actinomyces in tongue can mimic other infections such as nocardiosis or tongue abscess and neoplasms (i.e., neuroma, metastatic tumor). The main diagnostic method is the detection of sulphur granules in the histopathological examination of material obtained from sinus tractus, abscess material or the lesion (5,11).

Excision of fibrotic lesions in particularly complicated cases or drainage together with marsupialization of sinus tractus in diffuse abscess, accompanied with medical therapy is often necessary to tailor a treatment. High-dose penicillin is the first-line antibiotic treatment. Clindamycin, erythromycin, tetracycline, and lincomycin are among the other treatment options (4-12). In the present case, as the lesion formed a mass with hard consistency, excision was performed initially and antibiotic therapy was given according to the results of histopathological examination.

However, actinomyces can recur after months or years and long-term antibiotic therapy prevents the risk of recurrence (10-12).

In the present case, as the pathological diagnosis following excision was actinomyces and as it was sensitive to penicillin, we administered penicillin and penicillin G for four weeks. During a 12-month follow-up, recurrence was not observed and the lesion was found to be completely healed.

## CONCLUSION

In conclusion, actinomyces in tongue is a difficult condition to diagnose, particularly when it does not cause prominent findings and it can be misdiagnosed as tumoral lesions. Biopsy from the expanded and hypertrophied lesions in oral region is essential for the diagnosis. The main approach in treatment is complete removal of the lesion together with the surrounding infected tissue and subsequent administration of convenient antibiotic at sufficient doses and durations.

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