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A Rare Surgical Emergency: Lingual Abscess

Nadir Görülen Bir Cerrahi Acil: Dil Apsesi

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ABSTRACT Lingual abscesses are rarely seen clinical conditions. However, they can often be missed in the differential diagnosis. They need to be quickly recognized and treated as they can threaten the airway. In this article, three cases of lingual abscess with different etiologies admitted to our clinic within three months are presented. The basis of the management of the treatment of lingual abscesses is to drain the abscess urgently after the airway is secured. If the abscess is located in the anterior 2/3 of the tongue, drainage can be performed in the emergency room or outpatient clinic with needle aspiration or incision. However, it can be performed in the operating room with the aid of intubation if it is located in the posterior 1/3 of the tongue; because posteriorly located abscess may threaten the airway. This pathology should be well known because it can be life-threatening if left untreated.

Keywords: Tongue; abscess; drainage; tracheotomy; emergencies

ÖZET Dil apseleri oldukça nadir görülmektedir. Bu nedenle çoğu zaman ayırıcı tanıda atlanabilmektedirler. Solunumu tehlikeye sokabilecekleri için hızlıca tanınıp tedavi edilmeleri gerekmektedir. Yazımızda üç ay içerisinde kliniğimize başvuran farklı etiyolojik nedenlere sahip üç dil apsesi olgusu sunulmuştur. Dil apselerinin tedavi yönetiminin temelinde hava yolunun güvene alınması yer alır, hava yolu güvene alındıktan sonra apsenin acil olarak drene edilmesi gerekmektedir. Apse dilin ön 2/3'lük kısmında yer alıyorsa drenaj acil servis ya da poliklinik şartlarında iğne ile aspirasyon şeklinde ya da insizyon ile yapılabilirken dilin arka 1/3'ünde yer alan apselerde olduğu gibi solunumun etkileneceği durumlarda ameliyathanede entübasyon eşliğinde yapılabilir. Etkin tedavi gerçekleştirilmezse hayatı tehdit edebilen bu patolojinin iyi bilinmesi gerekmektedir.

Anahtar Kelimeler: Dil; apse; drenaj; trakeotomi; aciller

Lingual abscesses are rarely seen clinical conditions but they can be life-threatening.[1-8] During the last decades, the incidence has decreased due to the widespread use of antibiotics and improvements in oral hygiene.[2] These abscesses can cause complications such as sepsis or airway problems.[3] Early diagnosis and treatment are essential to avoid these complications.[4] In this article, we aimed to present three cases that were managed in our clinic within three months and to discuss the diagnosis and treatment of these patients in the light of the literature.

CASE REPORTS

Informed consent was obtained from all patients. The patients were treated in our tertiary hospital.

CASE 1

A 35-year-old male patient complained of pain, swelling of the tongue, and dysphagia. The patient stated that his complaints started two days ago. He had a medical history of dental intervention ten days ago and stated that a metal instrument was stuck to the back of his tongue during the procedure. Physical examination confirmed a fluctuant mass approximately 2 cm in the back of the middle third of the tongue. The swelling was painful on palpation. The dental status was correct. The patient was afebrile, non-toxic, and had normal vital signs. The patient had no history of systemic disease. The patient had a 40 pack-year smoking history. Some routine laboratory test results were as follows: White blood cells (WBC) 16.6 $10^3/\mu L$

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(neutrophils (NE), 64.5%; lymphocytes (LY), 25.6%; monocytes (MO), 8.3%), and C-reactive protein (CRP), 9.94 mg/L. Computed tomography (CT) was performed and revealed a mass with a diameter of 20 x 15 mm and hypodense area with irregular borders (Figure 1). An incision of 1 cm was made, and pus was drained under general anesthesia. Samples were taken for microbiological and histopathological examinations. The culture of the pus was reported as the presence of group D beta-hemolytic streptococci. Histopathological examination revealed ulcerative inflammation. The patient was consulted to the Infectious Diseases and Clinical Microbiology Department. During the postoperative period, the patient was treated with intravenous (IV) 2x1 g ceftriaxone and 2x500 mg metronidazole for seven days. The patient was discharged with oral antibiotic treatment, in the three months follow-up no recurrence was observed.

FIGURE 1: Neck CT examination of case 1, axial section.

CASE 2

A 74-year-old male was presented to the Ear-Nose-Throat (ENT) clinic complaining of acute and painful swelling of the tongue, dyspnea, and dysphagia. The patient stated that his complaints started four days ago. Physical examination revealed a very painful swelling on the middle third of the tongue. The patient was afebrile, non-toxic but tachypneic. He had a medical history of hypertension. He wasn't a smoker. Some routine laboratory test results were as follow: WBC 10,9 10^3/µL (NE, 84.1%; LY, 5.6%; MO, 9.1%), and CRP, 26.18 mg/L. Magnetic resonance imaging (MRI) scan confirmed the presence of an abscess (Figure 2). A tracheotomy was performed under general anesthesia, and the pus was drained by making a 1 cm incision into the abscess. Samples were taken for microbiological examination. Penrose drain was placed into the abscess cavity. The culture of the aspirate showed no bacterial growth. The patient was consulted to the Infectious Diseases and Clinical Microbiology department. During the postoperative period, the patient was treated with 3x4,5 g piperacillin-tazobactam and 3x900 mg clindamycin IV for ten days. The patient was discharged with oral antibiotic treatment, with no reports of recurrence.

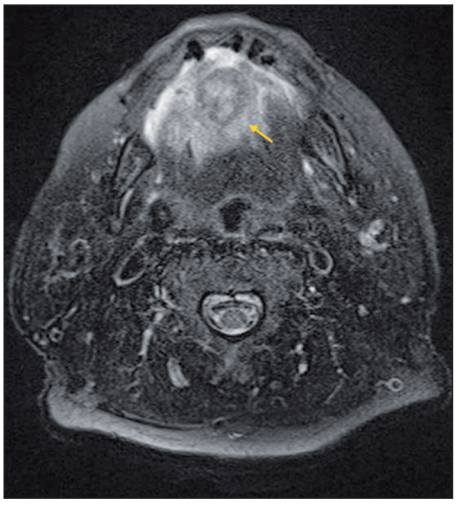

FIGURE 2: Facial MRI examination of the case 2, axial section.

CASE 3

A 28-year-old female patient hospitalized in the Hematology Department and receiving chemotherapy for acute lymphoblastic leukemia (ALL) was consulted to our clinic. The patient reported pain, swelling of the tongue, and dysphagia. Physical examination revealed the presence of multilobed abscess that was fistulized. The patient had poor oral hygiene and multiple caries. The patient had no history of other systemic diseases and smoking. Some routine laboratory test results were as follow: WBC, 5.6 10^3/µL (NE, 83.1%; LY, 11.4%, MO, 4.5%), and CRP, 207 mg/L. CT was performed, and a mass confirming the presence of an abscess was detected (Figure 3). The multilobed abscess was drained under regional anesthesia. Necrotic tissues were debrided every day. Dental hygiene problems were fixed. The culture of the pus was reported as the presence of

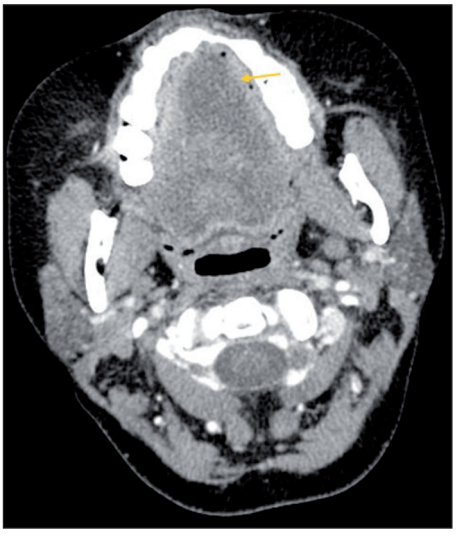

FIGURE 3: Neck CT examination of case 3, axial section.

mixed oral flora. The patient was consulted to the Infectious Diseases and Clinical Microbiology Department. The patient was treated with 3x4.5 g of piperacillin-tazobactam and teicoplanin IV from 1x6 mg/kg for 15 days. Abscess healed, and no recurrence was observed.

DISCUSSION

The tongue is continuously exposed to trauma and numerous pathogens but it is resistant to infectious agents.[1,6] This resistance is provided by contact with saliva, rich blood circulation, thick mucous layer, unique muscle structure, and antimicrobial properties.[1,2,6,7] Caries and foreign body-induced traumas are generally observed in the etiology of lingual abscesses; however, some cases are idiopathic.[1,6,7] Conditions such as poor oral hygiene, smoking, diabetes, chemotherapy, immunosuppression may be precipitating factors for lingual abscess.[2,7] Foreign bodies are also risk factors for lingual abscess in healthy people.[4] Although its frequency does not change with gender, age, and socioeconomic status, there are also studies showing that it is more common between the ages of 30-50.[1,8] Generally, they are located in the anterior part of the tongue, and the reason for abscesses observed in this section is mainly trauma.[4,6-8]

It may be challenging to recognize lingual abscesses that do not show apparent symptoms.[3] Most patients experience nonspecific symptoms.[4] Systemic symptoms usually are not observed. Patients can be misdiagnosed due to the referred pain.[3] Common symptoms are swelling in the tongue, dysphagia, odynophagia, otalgia, dyspnea, and limited movement of the tongue.[4,6,8,9] Dyspnea can be a symptom of airway obstruction, and securing the airway is the key point of treatment.[9]

Abscesses, located in the anterior part, can be diagnosed earlier because they can be easily identified by inspection.[2,5,8] Both diagnosis and surgical treatment of abscesses in the posterior part are more challenging.[5] For treatment, broad-spectrum antibiotics should be used that may be effective for oral flora after drainage.[6,7,9] Antibiotherapy should be revised after microbiological culture results are obtained.[6,7] There is no consensus on the duration of antibiotherapy.[7] The addition of corticosteroids to the treatment is controversial but it has an edema-reducing effect.[2,7] Predisposing factors also need to be eliminated.[4] In lingual abscess, the most common isolated organisms are *Staphylococcus aureus,* alpha-hemolytic streptococci, *Haemophilus spp., Bacteroides spp*., and anaerobic cocci, mixed culture results are also common.[6,7,9] Drainage can be performed by needle aspiration or by incision.[4,7] Needle aspiration causes less edema, and it is safer for the airway.[6] Drainage of the abscesses located in the anterior part can be performed under local anesthesia, but abscesses that are involving the posterior third of tongue may cause difficulty in breathing, so in these cases, airway management should be added to the treatment.[6-8] Recurrence after treatment is rare in lingual abscesses due to the unique nature of the tongue.[1]

Edema due to anaphylaxis, cysts, lingual artery aneurysm, hematoma, arteriovenous malformation, malignancy should be considered in differential diagnosis.[4,6-9] Also infected thyroglossal cysts and lingual tonsil abscesses should be considered in abscesses located in the posterior part.[5]

Imaging methods such as CT, MR, and ultrasonography may be useful for diagnosis.[2,3,6] These methods are also valuable for differential diagnosis.[7] CT can be used to distinguish between cellulite and abscess and to identify other lesions considered in the

differential diagnosis.[7] While cellulite can usually be treated only with antibiotherapy, drainage is also required for abscess.[1]

Case 1 had a history of dental treatment in etiology and smoking as a predisposing factor. The predisposing factor could not be detected in Case 2. Case 3 was receiving chemotherapy and multiple number of dental caries were detected in the mouth. Drainage was performed under general anesthesia in cases 1, and 2, since the abscess was located in the posterior third of the tongue. A tracheotomy was performed to secure the airway in Case 2 because dyspnea was present at the time of admission. In Case 3, drainage was performed under local anesthesia because the abscess was in the anterior part of the tongue. In three cases, drainage was preferred by making an incision, and broad-spectrum antibiotherapy was started after the procedure. In Case 2, penrose drain was placed after drainage, while it was not preferred in the other two cases. Placement of a drain did not provide an advantage in the treatment process. In Case 3, in addition to the immunosuppressive effect of chemotherapy, dental caries were seen as a possible focus, and this focus was eliminated by performing dental treatments. Dental caries were treated to prevent the recurrence of lingual abscess during chemotherapy. In accordance with other publications in the literature, no recurrence was observed in all three cases.

In patients presenting with tongue pain and tongue swelling, lingual abscesses should also be considered in the differential diagnosis especially lingual abscesses can cause airway obstruction and threaten life.

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No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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