

## Case Report

### Abscess of Tongue Root - An Emergency Case?

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#### Abstract

Abscess of the tongue is a rare pathology. It is even less frequent and more dangerous when located in the tongue root. It usually emerges as a result of injury or foreign body. In the tongue root, it may progress into a laryngeal edema and result in consequent suffocation. The progression might be very rapid, diagnosed on CT or MRI and with elevated blood markers. The suggested treatment is surgical drainage (if achievable) and medical antibiotic treatment. We present two cases of tongue root abscesses, in which the first one was successfully drained, in the other case the abscess was not achieved. Antibiotics were applied in both. However, the treatment was successful in both cases, without evidence of recurrence. The rare clinical unit is of high importance as it may rapidly progress to a life-threatening emergency complication.

**Keywords:** Airway Obstruction; Angioedema; Lingual Abscess; Macroglossia

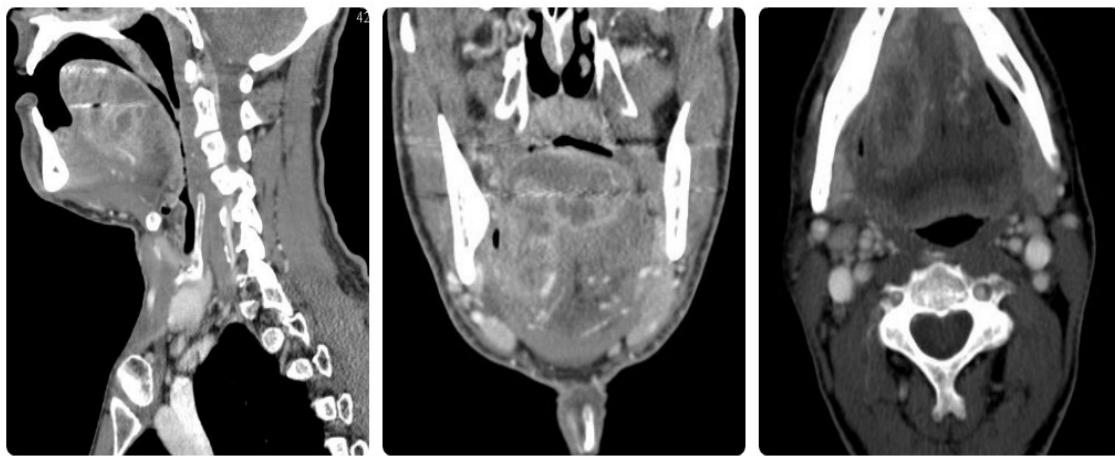
#### Introduction

Acute swelling of the tongue (acute macroglossia) may obstruct the upper airway and become a life-threatening condition. Most of the cases are due to angioedema, hemorrhage, infarction, or abscess [1]. A lingual abscess is an acute rare inflammatory condition; those involving the root are even rarer and more dangerous, as they may result in an airway obstruction. Despite the tongue being in frequent contact with trauma, bites and foreign

bodies, the tongue is relatively immune to infection. Abscess incidence is so low because of the tongue's constant mobility, thick keratinized mucosa, rich vascularity and lymphatic drainage and the immunologic properties of saliva [2].

#### Case 1

A 62-year-old man with a history of three-day tongue pain, a foreign body throat sensation, progressive dysphagia, coughing and saliva dribbling. Inflammatory markers were elevated (CRP 170 mg/l, WBC normal). Under examination a pale swelling of the tongue and laryngeal aditus showed on CT; tongue tumor or abscess was suspected (Figure 1).

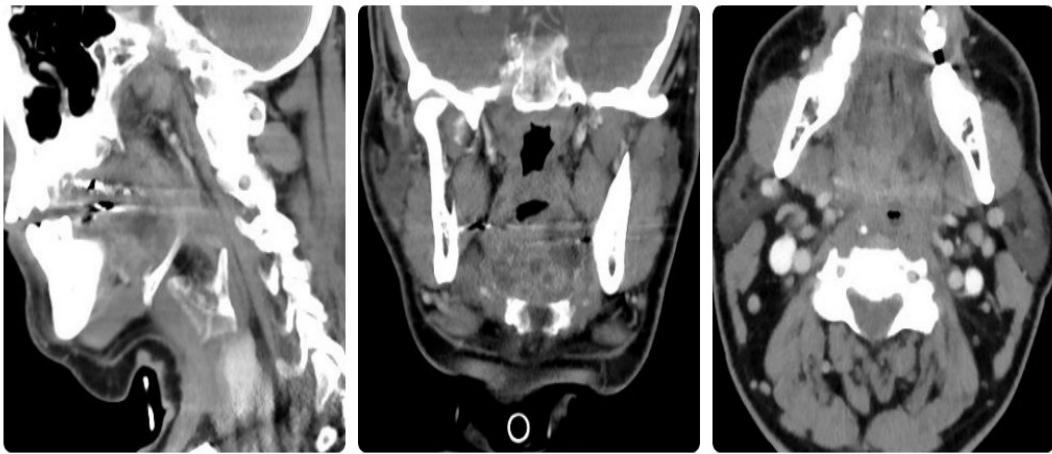


**Figure 1:** CT with contrast medium i.v: The right-hand tongue roof abscess with a postcontrast enhancement (42x44x 35mm).

Antibiotic treatment (metronidazole and ampicillin + clavulanate) was started. Surgery was performed trans orally, but the pus was not achieved. Even after subsequent CT and MRI confirming the suspicion of abscess, not even the second surgical attempt was effective. However, the pathology slowly resolved. The airways were temporally ensured with tracheostomy. Both clinical and laboratory pathology resolved. At the one-year checkup, the patient is symptom free.

## Case 2

A 53-year-old patient presented himself with a history of a three day, slowly growing, itchy tongue edema of unknown etiology, with no known allergy, odynophagia was even painful in swallowing saliva. The patient experienced a strange throat sensation; angioedema steroids were administered which brought on a prompt regression of the edema on the tongue and mouth floor. Inflammatory markers were very slightly elevated (CRP 15 mg/l, leukocytosis 12). After a few days the symptoms recurred. CT (Figure 2).



**Figure 2:** CT with contrast medium i.v: The midline tongue roof abscess with a postcontrast enhancement.

The CT surprisingly revealed a suspected tongue abscess and under palpation a painful bulging on tongue surface emerged. Surgery was performed via transoral incision, pus was discharged, antibiotic therapy followed (ampicillin with clavulanate). The healing was successful, as the patient is symptom free after one year.

## Discussion

Abscess from the anterior two thirds of the tongue results from bites, local traumas and foreign bodies [3,4]. The posterior third can be related to inflammation originating from the lingual tonsils, thyroglossal duct remnants and pathologies from the molars.

In rare instances, blood-borne infections can be seen. Always predisposing factors (poor oral hygiene, immunodeficiency status, chemotherapeutic drugs and diabetes) must be considered. [5]. The most frequent causative agents are staphylococci and streptococci, although other pathogens may be involved. Lingual abscesses occur among all age groups, but most patients are between 30 and 50 years old, with no sex predilection.

The clinical picture might be variable: fever, tender tongue bulging, odynophagia, dysphagia and otalgia, tongue protrusion and saliva dribbling, all of which develop within hours or a few days. Abscesses located in the anterior two thirds of the tongue can be managed only medically, since the upper airway is not involved. However, abscesses involving the tongue root may cause progressive dyspnea, thus surgical drainage is mandatory and sometimes tracheostomy cannot be avoided [6]. Abscesses located in the anterior two thirds of the tongue are easier to diagnose than those situated in the posterior third, since their symptoms are less specific [7]. Computed Tomography (CT), and, particularly, MRI, enable precisely identifying the majority of lingual abscesses. The MRI allows a better visualization of soft tissue and avoids artifacts of the jaw and dental amalgam. An acute enlargement of the tongue can be a diagnostic challenge especially if there is no appropriate history. Our cases were complicated by the negative patients' history, no suspicion of a foreign body, elevation of CRP only in one patient, and finally no predisposing factors. The pale edema responding to steroids more resembled angioedema.

Problems of differential diagnosis for macroglossia is very complex: acute or chronic with an acute progression; it must originate in the tongue itself or in the surrounding structures: foreign body, trauma, injury, previous surgery, angioedema (allergic or vascular), acute or chronic inflammation (lingual tonsillitis, tuberculosis, sarcoidosis and actinomycosis), tumour (benign or malign), vascular (malformation or infarction), dermoid or thyroglossal cysts, metabolic (due to hypopituitarism, deficiency of vitamin B12, hypothyroidism, amyloidosis, acromegaly, iron deficiency) [8]. The treatment must ensure free airways and abscess drainage. The antibiotic therapy used in our case presented an adequate coverage for the most common microorganisms according to the literature. Only conservative treatment without surgical drainage might be sufficient, as it finally was in our second patient for whom surgery was not successful [9]. As in our first case, the tongue abscess was certainly not easy to diagnose. The oscillatory behavior responding to steroids probably on account of the anti-inflammatory effect seemed consistent with angioedema. Moreover, the patient history was negative for possible injury by foreign body or tongue injuries, normal inflammatory markers (WBC, CRP) no other clinical signs of inflammation; pain was the only inconsistent aspect leading us to further investigation. On the other hand, the other patient's clinical and laboratory signs of inflammation in accordance with CT strongly suggested abscess,

but no abscess was drained.

## Conclusions

Posterior tongue abscesses are rare but potentially life-threatening pathologies. Trauma, foreign bodies, and surgical history are the most common etiological factors. Posterior tongue abscess poses a life-threatening complication of airway obstruction or even the risk of sepsis. Therefore, the observation of patients is important in order to record any changes in the clinical presentation. This is also important for angioedema, as in our case, the observation lead to the final precise diagnosis. CT or MRI is essential in diagnostics. Surgical drainage, combined with antibiotics, should be mandatory to secure airways and promote healing.

## Conflict of Interest

There's no financial/personal interest or belief that could affect the objectivity.

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