

CASE REPORT

Posterior Lingual Abscess; Report of Two Cases

Miguel Saro-Buendía^{1,5*}, Pedro Suarez Urquiza², Judit Amigo González³, Maria José Lesmas Navarro¹, Miguel Mazón⁴, Miguel Armengot Carceller^{1,5}

1. Department of Otorhinolaryngology, La Fe University and Polytechnic Hospital, Valencia, Spain.
2. Department of Microbiology, La Fe University and Polytechnic Hospital, Valencia, Spain.
3. Department of Internal Medicine, La Fe University and Polytechnic Hospital, Valencia, Spain.
4. Department of Radiology, La Fe University and Polytechnic Hospital, Valencia, Spain.
5. Department of Surgery, Faculty of Medicine, University of Valencia, Spain.

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Abstract: The lingual abscess is rare due to several protective mechanisms against infection in this location. Concretely, the abscess in the base of the tongue (posterior lingual abscess) is even more exceptional. Its prompt detection is crucial to avoid potentially fatal airway complications. To familiarize physicians with this condition, we report 2 cases of posterior lingual abscess. Both were referred to our emergency department due to minor oropharyngeal complaints. Finally, both were diagnosed and required surgical drainage. The clinical evolution was successful: both were discharged in less than 72 hours and follow-up one week later confirmed clinical recovery.

Keywords: Abscess; Tongue; Airway Management; Emergency Medicine

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1. Introduction

The tongue is the most voluminous oral cavity structure and is a common disease site (1). However, abscesses in this location are rare due to several protective mechanisms against infection and knowledge about the condition is limited (2, 3). The lingual abscess might be anterior (A- LA; affects the anterior two thirds of the tongue or oral tongue) or posterior (P- LA; affects the posterior third of the tongue or tongue base). The differentiation is relevant, the P- LA is less frequent, its diagnosis is more challenging and implies a greater risk of airway compromise. Also, the underlying causes and management differ (3, 4). The A- LA is traditionally caused by bite trauma or seizure and is evident on examination (5). The P- LA underlying causes might be lingual tonsillitis, infected thyroglossal duct cyst remnants, penetration of foreign objects, or extension from a dental infection (4). Due to its rarity, little is known about epidemiological features of P-LA (4, 5). Here we report two cases of P-LA, the objective is to enhance suspicion about this entity as a potentially fatal condi-

tion behind minor oropharyngeal complaints and findings.

2. Case Presentation

2.1. Case 1

A previously healthy 26-year-old woman presented to our emergency department (ED) with odynophagia and oropharyngeal erythema on examination. She received an acute pharyngitis diagnosis. She was readmitted to the ED 24 hours later due to symptomatic worsening (fever, increased muffled voice, and halitosis). Flexible endoscopy showed a left side tongue base tumefaction (Figure 1). Lab tests showed leucocytosis with left-deviation and raised C reactive protein levels of 92.8 mg/ L. Contrast-enhanced neck computed tomography (CT) scan showed a left side tongue base abscess (Figure 2). A P-LA was diagnosed, and the patient was hospitalized for close clinical observation and intravenous therapy with broad-spectrum antibiotics (combination of ceftriaxone and clindamycin) and anti-inflammatory drugs (methylprednisolone, dexamethasone). After 10 hours, due to the lack of clinical improvement, surgical drainage was required. The surgical technique consisted of a tongue base exploration with a GlideScope® laryngoscope. Then, a wide incision with cold instruments over the tumefaction was performed to drain the abscess. Samples of purulent fluid revealed a

* **Corresponding Author:** Miguel Saro- Buendía; Fernando Abril Martorell Avenue, 106, Postal Code 46026. Email: msarobuendia@gmail.com, Phone: +34-671 688 648, ORCID: <https://orcid.org/0000-0003-4794-3615>.

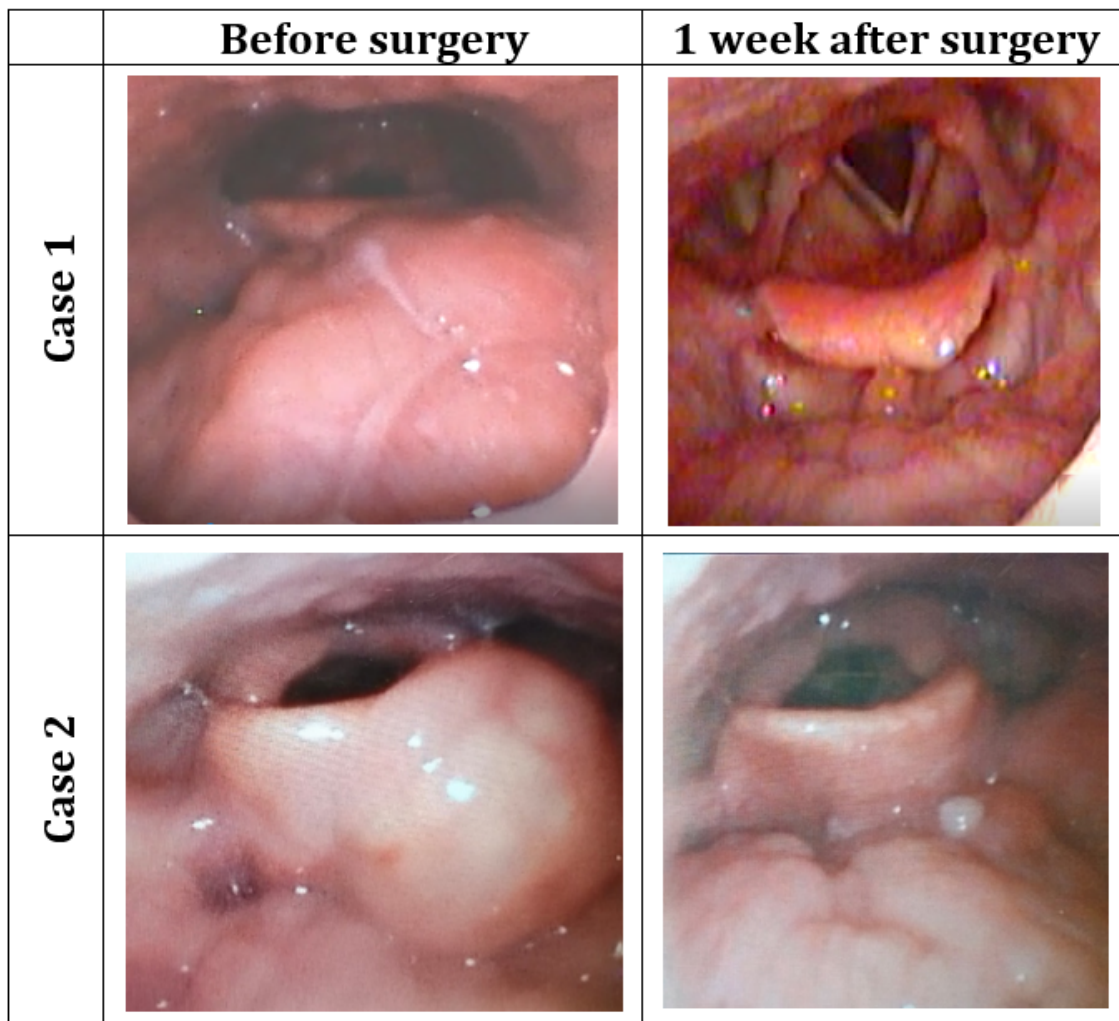


Figure 1: Endoscopic visualization of tongue base at the emergency department before surgery and 1 week after surgery (at follow-up). Case 1: Left tongue base tumefaction obliterates the ipsilateral vallecula and contacts the epiglottis. Case 2: Left well-circumscribed vallecula tumefaction contacting the epiglottis. Normal tongue base findings are seen after surgery in the two cases.

mixed infection including *Streptococcus* spp. and *Fusobacterium* spp. The patient showed clinical improvement and was discharged in 72 hours. She completed the treatment at home. At the follow-up visit one week later, she presented full clinical and endoscopic recovery (Figure 1).

2.2. Case 2

A previously healthy 47-year-old woman presented to the ED with a 72-hour history of odynophagia, muffled voice, and asthenia. Direct visualization showed mild oropharynx erythema. Flexible endoscopy showed a left well-circumscribed vallecula tumefaction (Figure 1). Lab tests showed leucocytosis with left-deviation and raised C reactive protein levels of 30.4 mg/L. Contrast-enhanced neck CT scan showed a left side vallecula-tongue base abscess (Figure 2). A P-LA was di-

agnosed and the patient was hospitalized for close clinical observation and intravenous therapy (same as Case 1). After 18 hours, due to the lack of improvement, surgical drainage was indicated. The surgical technique consisted of the P-LA exposure with a Kleinsasser laryngoscope and a wide incision with cold instruments to drain the abscess. Culture of the purulent fluid revealed mixed flora. The patient showed clinical improvement and was discharged in 48 hours to complete the treatment at home. At the follow-up visit one week later, the patient presented full clinical and endoscopic recovery (Figure 1).

3. Discussion

The prompt detection of a P-LA is crucial and a diagnostic delay can result in sepsis, mediastinitis, and a fatal airway ob-

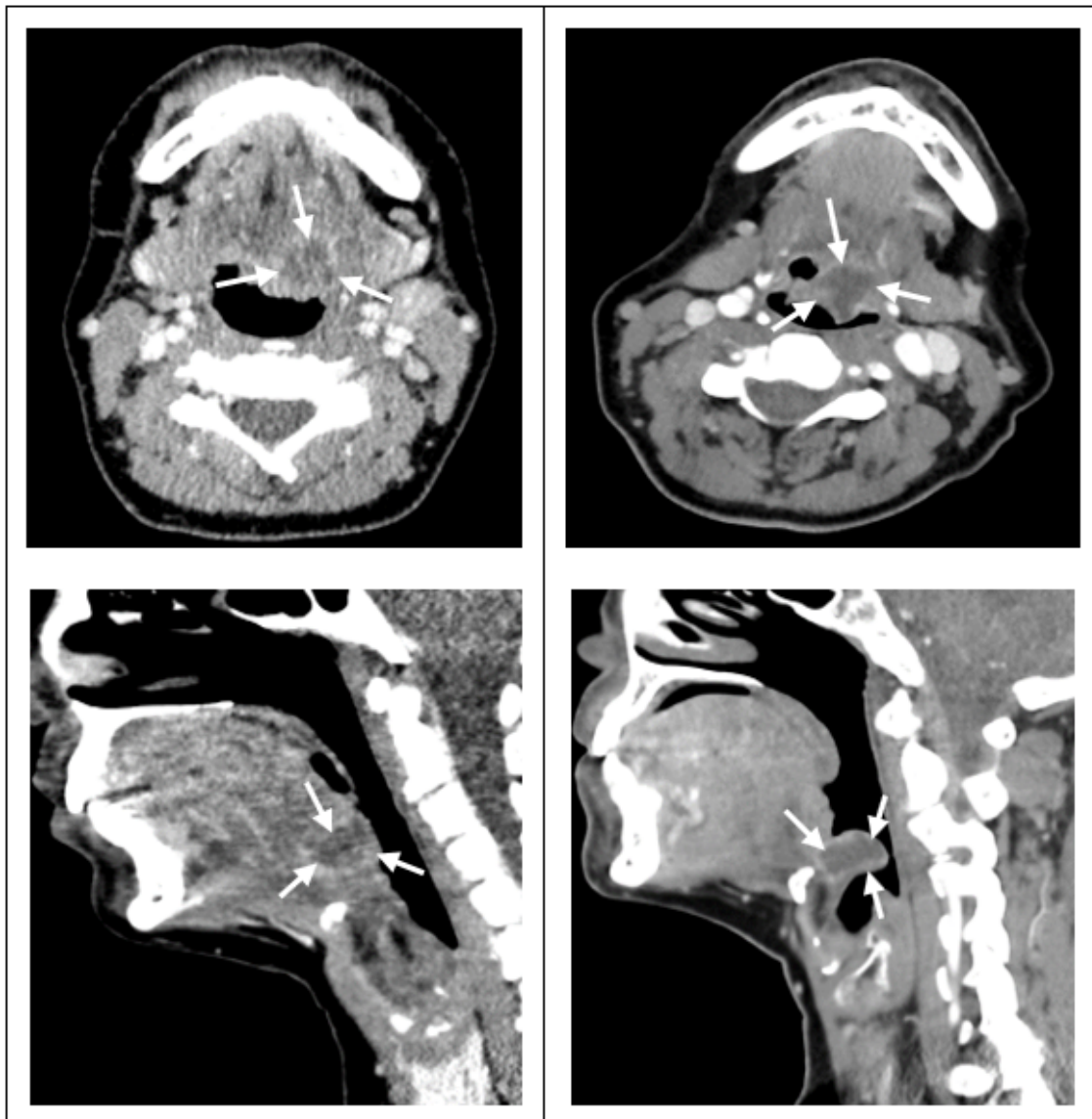


Figure 2: Contrast-enhanced neck computed tomography scan. Left (case 1): Left tongue base focal fluid collection of low attenuation with surrounding rim-enhancement and pre-epiglottic fat stranding. Right (case 2): Left vallecule-tongue base focal fluid collection of low attenuation with surrounding rim-enhancement.

struction (5-8).

Diagnosis can be challenging because the P-LA clinical presentation is usually vague and unspecific and, as happened with case 1, might lead to the misdiagnosis (6, 7). Orolingual palpation helps to detect a P-LA (5). However, we did not perform palpation and we believe this manoeuvre is not routinely required in patients referring with mild odynophagia. The posterior third of the tongue is visualized by direct or indirect laryngoscopy techniques (6). Lab tests show normal levels of white blood cells or slight leucocytosis like in our cases (4, 5, 8). Common pathogens are those corresponding

to normal flora of oral cavity and oropharynx (4, 5). Our samples presented *Streptococcus* spp. and *Fusobacterium* spp. Imaging provides the key to confirm the P-LA diagnosis and evaluate its extension (4, 5).

Contrast-enhanced CT scan might show the abscess as a low attenuation focal confined collection with capsular rim-enhancement (Figures 2) and might identify the underlying cause. However, in our cases the underlying cause was not identified.

Regarding management, three domains must be contemplated. First, maintaining the airway patency is crucial (6,

8). There should be a low threshold for awake intubation and tracheostomy might be needed (8). Second, the abscess must be drained, an exception to this rule can be sub centimetre collections, which might respond to isolated medical therapy (7). Third, empirical broad-spectrum antibiotics should be administered to cover both aerobic and anaerobic bacteria arising in the oral cavity and oropharynx (5, 8, 9). The abscess drain can be performed using needle aspiration or, as we did, using transoral surgery (2, 4, 9). Needle aspiration has advantages like the possibility to avoid general anaesthesia and endotracheal intubation (2, 9). However, transoral surgery may be the best option to assure a successful drainage and prevent reinfection (10). In our cases surgery was successful with no complications and, within a week, both patients presented a full clinical and endoscopic recovery.

4. Conclusions

The posterior lingual abscess is rare. However, it is relevant for physicians, because its prompt diagnosis and management should minimize the risk of potentially fatal airway complications.

5. Declarations

5.1. Acknowledgments

None.

5.2. Competing interests

None.

5.3. Funding source

None.

5.4. Authors Contribution

Miguel Saro- Buendía: Main contributor, study conception and design, acquisition and interpretation of data, draft of manuscript and preparation, final version approval. Pedro Suarez Urquiza and Judit Amigo González: Study design, acquisition and interpretation of data, draft of manuscript and preparation, final version approval. Maria José Lesmas Navarro: Data acquisition, interpretation of data, final version approval. Miguel Mazón: Participated in the artworks and selection of figures. Grammar review, final version approval. Miguel Armengot Carceller: Study conception and design, interpretation of data, final version approval.

5.5. Patient Consent Statement

Both patients participated voluntarily and consented to the publication of clinical information related to their cases. The study follows the principles outlined in the Declaration of Helsinki and is in accordance with the Ethics Committee of our institution (code 2022-756-1).

5.6. Sponsorships

None.

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