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Rim enhancement, drainage, and inflammatory response in patients with anterior versus posterior lingual abscesses

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■ MAIN POINTS

- Posterior lingual abscesses exhibited larger diameters (27.43 ± 11.64 mm) and significantly longer hospital stays (9.29 ± 1.89 days) than anterior abscesses.
- Surgical drainage markedly reduced WBC count by day 5 (9.31 ± 2.59 vs 13.27 ± 4.48 , $p=0.039$) and shortened hospitalization (7.08 ± 1.49 vs 10.00 ± 1.82 days, $p=0.005$).
- Rim enhancement on contrast-enhanced computed tomography did not correlate with abscess size, inflammatory markers, or length of stay ($p>0.05$).
- *S. agalactiae* and other viridans streptococci predominated among cultured pathogens.
- Early, localization-specific, multidisciplinary management optimizes outcomes in lingual abscess patients.

■ ABSTRACT

Aim: Lingual abscesses are rare but potentially serious infections of the tongue, with limited data available in the literature. This study aimed to compare the clinical, radiological, and laboratory features of anterior and posterior lingual abscesses and evaluate the impact of drainage on patient outcomes.

Materials and Methods: This retrospective case series included 17 patients diagnosed with lingual abscess between February 2019 and March 2025. Patients were categorized based on anatomical localization (anterior vs. posterior). Demographic data, symptoms, laboratory values (WBC, CRP, etc), computed tomography findings, treatment modalities, and outcomes were analyzed. Subgroup comparisons were performed based on abscess location, drainage status, and rim enhancement.

Results: Of the 17 patients, 10 had anterior and 7 had posterior abscesses. Posterior abscesses were larger and associated with significantly longer hospital stays ($p = 0.004$). Drainage was associated with significantly shorter hospitalization ($p = 0.005$) and greater reduction in white blood cell counts by day 5 ($p = 0.046$). Rim enhancement on computed tomography was not significantly associated with clinical or laboratory outcomes. Streptococcus species were the most commonly isolated pathogens. No major complications or airway interventions were required.

Conclusion: Posterior lingual abscesses demonstrate a more severe clinical course than anterior abscesses. Surgical drainage is associated with improved inflammatory markers and faster clinical recovery. Rim enhancement alone may not reliably reflect disease severity. These findings support the importance of early diagnosis and individualized management based on anatomical location and clinical progression.

Keywords: Tongue disease, Abscess, Drainage, Mediators of inflammation

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■ INTRODUCTION

Lingual abscesses are infrequent but significant pathological conditions that primarily affect the parenchyma of the tongue and are typically of an infectious origin [1,2]. Research on lingual abscesses in the literature is exceedingly limited, predominantly comprising sporadically published case reports [2,3], with approximately 50 reports over the past three decades. This paucity of data has resulted in a significant gap in knowl-

edge, leading to variability in diagnostic practices and lingual abscess treatment strategies. Although early diagnosis and appropriate treatment can reduce morbidity and mortality rates, the absence of comprehensive data on this condition complicates its clinical management [1].

Lingual abscesses are typically categorized into two primary types based on their anatomical location: anterior and posterior [1]. These distinct localizations contribute to consider-

able differences in clinical presentations, diagnostic methodologies, and therapeutic strategies [1,2]. In particular, the diagnosis of posterior lingual abscesses poses greater diagnostic challenges and is associated with a heightened risk of airway obstruction, often necessitating prompt medical intervention [4,5]. Anterior lingual abscesses are usually associated with trauma (e.g., biting or foreign bodies), whereas posterior abscesses more often result from underlying conditions, such as infected thyroglossal cysts or lingual tonsillitis. Poor oral hygiene, dental infections, immunosuppression, and chronic tobacco use are additional risk factors [1,2,6–8].

Accurate diagnosis requires detailed history, examination, and often contrast-enhanced CT, especially for posterior abscesses and deep neck involvement [5,8,9]. The management of lingual abscesses mainly focuses on securing the airway, performing abscess drainage, and administering appropriate antibiotic therapy [1,2,6]. Airway management is of paramount importance, especially in cases of posterior abscesses or in patients exhibiting respiratory distress [1,6]. Abscess drainage may be accomplished through surgical incision and drainage or needle aspiration, with broad-spectrum antibiotics being essential for effective treatment [1,5,6,10].

This study was designed to offer comprehensive data on the differentiation, prognosis, and management of lingual abscesses, addressing the limited information currently available in the literature. By filling existing gaps in the literature, the findings will contribute to the enhancement of management strategies for patients with lingual abscesses.

■ MATERIALS AND METHODS

Study population

The Institutional Scientific and Ethical Review Board approved this retrospective case series under approval number (TABED 2-25-1131). This single-center, observational study reviewed data from patients diagnosed with a lingual abscess between February 2019 and March 2025 at the ENT Department of a tertiary referral center.

Although the literature on lingual abscess is limited, the minimum required sample size for this study was determined based on previously published case series and systematic reviews. A large effect size (Cohen's $d = 1.2$) was assumed for comparisons between anterior and posterior groups. The sample size was calculated using a significance level (α) of 0.05 and a power ($1-\beta$) of 0.80. According to the power analysis conducted with G*Power software (version 3.1.9.6), at least 7 cases per group (a total of 14 cases) would be sufficient to detect a statistically significant difference between groups. The final study population included 17 patients, categorized into two groups based on anatomical localization: anterior lingual abscess ($n = 10$) and posterior lingual abscess ($n = 7$), thus meeting the required sample size. Written informed consent was obtained from all participants prior to their participation in the study.

Data collection and variables

Patient data, including demographic characteristics (age, gender, smoking history, and comorbidities), clinical presentation, radiological findings, laboratory results, microbiological culture data, treatment modalities, and clinical outcomes, were retrospectively retrieved from electronic medical records. Each case was categorized by abscess localization as either anterior or posterior lingual abscess. Anatomical distinction between anterior and posterior lingual abscesses was determined using the sulcus terminalis as the dividing line, with the foramen cecum at its apex serving as a reference point. Abscesses located anterior to the terminal sulcus were classified as anterior lingual abscesses, whereas those posterior to this anatomical landmark were classified as posterior lingual abscesses.

The assessed clinical variables included symptoms at presentation (e.g., sore throat, dysphagia, trismus, and dyspnea), hospitalization duration, and drainage status (performed vs not performed). Radiological parameters included the maximum abscess diameter and the presence or absence of rim enhancement on contrast-enhanced computed tomography.

Laboratory parameters, including white blood cell count (WBC), neutrophil count, lymphocyte count, large unstained cells (LUC), and C-reactive protein (CRP) levels, were evaluated on admission (day 0) and day 5 of hospitalization. All laboratory data were obtained using validated automated analyzers. Additionally, microbiological culture results from drained abscess material were recorded where available.

To identify differences in clinical course, laboratory trends, and outcomes, comparative analyses were performed between anterior and posterior lingual abscess groups, patients who underwent drainage and those who did not, and patients with and without rim enhancement on CT imaging.

Laboratory analysis

C-reactive protein (CRP) levels were measured using the Atellica CH C-reactive protein_2 (CRP_2) method on Siemens Atellica CI AutoAnalyzer systems via turbidimetric analysis. CBC results were obtained using the Siemens ADVIA 2120i hematology AutoAnalyzer systems.

Statistical analysis

Statistical analysis of the data obtained in the study was performed using IBM SPSS Statistics for Windows, Version 29.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation (SD), whereas categorical variables were expressed as frequencies and percentages (%). The Shapiro-Wilk test was used to assess the normality of the distribution of continuous variables. For normally distributed data, the homogeneity of variances between groups was evaluated using Levene's test for equality of variances. If the variances were equal, the independent samples t-test was applied; otherwise, the results from the adjusted t-test were reported. Fisher's exact test was used to compare categorical

Table 1. Comparison of Demographic, Clinical, Radiological, and Treatment Characteristics Between Anterior and Posterior Lingual Abscess Groups.

		Anterior lingual abscess group (n=10)	Posterior lingual abscess group (n=7)	p value
Age, y (mean ± SD)		50.90 ± 7.85	54.71 ± 14.18	0.486
Sex, n (%)	Female	3 (30)	2 (28.5)	ns
	Male	7 (70)	5 (71.5)	
Smoking status, n (%)	Yes	9 (90)	4 (57.1)	0.250
	No	1 (10)	3 (42.9)	
Clinical presentation, n (%)	Neck pain	-	1 (14.2)	-
	Sore throat	8 (80)	6 (85.7)	-
	Odinophagia	6 (60)	5 (71.5)	-
	Dysphagia	9 (90)	7 (100)	-
	Fewer	1 (10)	1 (14.2)	-
	Dyspnea	1 (10)	1 (14.2)	-
	Trismus	-	2 (28.5)	-
	Neck swelling	-	1 (14.2)	-
	Restricted cervical mobility	-	1 (14.2)	-
Maximum diameter of abscess, mm (mean ± SD)		18.70 ± 8.82	27.43 ± 11.64	0.098
Length of stay, day (mean ± SD)		6.7 ± 1.25	9.29 ± 1.89	0.004
Result of drainage attempt, n (%)	Successful	8 (80)	5 (71.4)	ns
	Unsuccessful	2 (20)	2 (28.6)	
Amount of drainage, mL (mean ± SD)		2.50 ± 1.69	3.60 ± 2.88	0.399
Etiology, n (%)	Idiopathic	7 (70)	4 (57.1)	-
	Odontogenic	1 (10)	1 (14.2)	-
	Surgery/trauma	2 (20)	-	-
	Acute tonsillitis	-	1 (14.2)	-
	Epiglottitis	-	1 (14.2)	-

Ns: Non-Significant.

Table 2. Comparison of Radiological and Clinical Characteristics Between Drained and Non-Drained Lingual Abscess Groups.

		Non-drained lingual abscess group (n=4)	Drained lingual abscess group (n=13)	p value
Rim enhancement on CT, n (%)				
Presence		1(25)	9(69.2)	0.250
	Absence	3(75)	4(30.8)	
Length of Stay, day (mean ± SD)		10.00 ± 1.82	7.08 ± 1.49	0.005
Maximum diameter of abscess, mm (mean ± SD)		14.75 ± 2.63	24.62 ± 11.21	0.011

variables. A p-value of <0.05 was considered statistically significant.

■ RESULTS

Demographic findings

A total of 17 patients were included in this study. Of these, 10 (58.8%) and 7 (41.2%) patients were categorized in the anterior and posterior lingual abscess groups, respectively. There was no statistically significant difference in the mean age between the anterior and posterior groups (50.90 ± 7.85 years vs. 54.71 ± 14.18 years, respectively, $p=0.486$). Gender distribution was similar between the groups, with 30% females and 70% males in the anterior group and 28.5% females and 71.5% males in the posterior group ($p=1.000$). Although smoking was more prevalent in the anterior group (90% vs. 57.1%), the difference was not statistically significant ($p = 0.25$) (Table 1).

Clinical findings

The most common presenting symptoms in both groups were sore throat (80% in the anterior group and 85.7% in the posterior group) and dysphagia (90% and 100%, respectively). Additional clinical features such as trismus (28.5%), neck swelling (14.2%), and limited cervical motion (14.2%) were more frequently observed in the posterior group than in the anterior group (Table 1).

Radiological findings

The posterior group had a larger average abscess diameter (27.43 ± 11.64 mm) than the anterior group (18.70 ± 8.82 mm), although this difference was not statistically significant ($p=0.098$). On contrast-enhanced computed tomography, rim enhancement was more frequently observed in the drained abscess group (69.2%) than in the non-drained abscess group (25%), but this difference was not statistically sig-

Table 3. Admission (d0) and Day 5 (d5) Laboratory Results of Lingual Abscesses by Anterior and Posterior Locations, Rim Enhancement Presence, and Drainage Status.

	Anterior lingual abscess group (n=10) mean ± SD	Posterior lingual abscess group (n=7) mean ± SD	p value
WBC _(d0)	12.60 ± 2.01	15.42 ± 4.16	0.136
WBC _(d5)	8.88 ± 3.16	12.20 ± 2.97	0.046
Neutrophile _(d0)	9.57 ± 2.41	12.20 ± 4.89	0.226
Neutrophile _(d5)	5.17 ± 3.07	8.53 ± 3.40	0.051
Lymphocyte _(d0)	2.12 ± 0.85	2.08 ± 0.83	0.93
Lymphocyte _(d5)	2.71 ± 0.95	2.82 ± 1.48	0.855
LUC _(d0)	0.13 ± 0.054	0.17 ± 0.081	0.242
LUC _(d5)	0.16 ± 0.03	0.16 ± 0.05	0.976
CRP _(d0)	39.89 ± 21.52	74.93 ± 47.89	0.105
CRP _(d5)	13.25 ± 8.65	25.58 ± 21.13	0.115
	Rim enhancement presence on CT (n=11) mean ± SD	Rim enhancement absence on CT (n=6) mean ± SD	p value
WBC _(d0)	13.37 ± 3.21	14.47 ± 3.62	0.528
WBC _(d5)	9.78 ± 3.19	11.10 ± 3.98	0.465
Neutrophile _(d0)	10.23 ± 3.50	11.44 ± 4.39	0.542
Neutrophile _(d5)	5.85 ± 2.97	7.84 ± 4.40	0.283
Lymphocyte _(d0)	2.09 ± 0.83	2.11 ± 0.87	0.962
Lymphocyte _(d5)	2.92 ± 1.35	2.46 ± 0.68	0.362
LUC _(d0)	0.14 ± 0.063	0.15 ± 0.079	0.755
LUC _(d5)	0.17 ± 0.047	0.13 ± 0.029	0.046
CRP _(d0)	63.24 ± 42.05	37.95 ± 12.42	0.176
CRP _(d5)	18.18 ± 18.16	18.60 ± 11.64	0.960
	Non-drained lingual abscess group (n=4) mean ± SD	Drained lingual abscess group (n=13) mean ± SD	p value
WBC _(d0)	14.63 ± 3.14	12.65 ± 4.29	0.411
WBC _(d5)	13.27 ± 4.48	9.31 ± 2.59	0.039
Neutrophile _(d0)	11.90 ± 3.49	9.43 ± 4.54	0.337
Neutrophile _(d5)	10.19 ± 4.81	5.43 ± 2.27	0.141
Lymphocyte _(d0)	1.72 ± 0.77	2.22 ± 0.82	0.308
Lymphocyte _(d5)	1.93 ± 0.54	3.01 ± 1.18	0.103
LUC _(d0)	0.13 ± 0.054	0.17 ± 0.081	0.921
LUC _(d5)	0.16 ± 0.06	0.16 ± 0.04	0.894
CRP _(d0)	44.57 ± 45.36	49.62 ± 40.89	0.835
CRP _(d5)	19.12 ± 30.64	13.47 ± 10.77	0.564

Abbreviations: WBC, White Blood Cell; LUC, Large Unstained Cells; CRP, C-reactive protein; CT Computer Tomography. The units of the WBC, Neutrophil, Lymphocyte, and LUC parameters are $\times 10^9/L$, and the unit of CRP is mg/L.

Table 4. Difference in Laboratory Results of Lingual Abscesses by Anterior and Posterior Locations, Rim Enhancement Presence, and Drainage Status Between Admission (d0) and Day 5 (d5).

	Difference WBC _(d0-d5) mean ± SD	p value	Difference Neutrophile _(d0-d5) mean ± SD	p value	Difference CRP _(d0-d5) mean ± SD	p value
Anterior lingual abscess group (n=10)	3.72 ± 2.13		3.45 ± 2.39		22.6 ± 16.5	
Posterior lingual abscess group (n=7)	3.22 ± 3.96	0.369	3.39 ± 5.29	0.489	39.4 ± 49.9	0.211
Non-drained lingual abscess group (n=4)	1.36 ± 1.48	0.046	2.34 ± 3.36	0.259	15.4 ± 19.10	0.18
Drained lingual abscess group (n=13)	4.18 ± 2.96		3.76 ± 3.87		33.84 ± 39.97	
Rim enhancement presence on CT (n=11)	3.59 ± 2.92	0.886	3.01 ± 3.19	0.550	38.66 ± 37.42	0.138
Rim enhancement absence on CT (n=6)	3.37 ± 3.17		4.18 ± 4.72		12.75 ± 19.60	

Abbreviations: WBC, White Blood Cell; CRP, C-reactive protein; CT Computer Tomography. The units of the WBC, Neutrophil, Lymphocyte, and LUC parameters are $\times 10^9/L$, and the unit of CRP is mg/L.

nificant ($p=0.25$). When rim enhancement was evaluated in relation to clinical parameters, the mean length of hospital stay was 7.36 ± 1.80 days in rim enhancement-positive patients and 8.50 ± 2.25 days in rim enhancement-negative patients, without a statistically significant difference ($p=0.273$).

Similarly, the maximum abscess diameter was comparable between rim enhancement-positive and -negative patients (22.18 ± 10.36 mm vs. 22.50 ± 12.27 mm, $p=0.576$) (Table 2) (Figure 1). In one patient, both pre- and posttreatment contrast-enhanced CT images were available, demon-

Table 5. Microbial culture results in lingual abscess cases.

Pathogens observed in cases of lingual abscesses	n (%)
No proliferation	4 (23.5)
No culture	4 (23.5)
<i>S. Agalactia</i>	2 (11.7)
<i>S. Anginosus</i>	1 (5.8)
<i>S. Constellatus</i>	1 (5.8)
<i>S. Hominis</i>	1 (5.8)
<i>S. Mitis-S. Oralis</i>	1 (5.8)
<i>S. Salivarius</i>	1 (5.8)
<i>S. Pneumoniae</i>	1 (5.8)
<i>S. Intermedius</i>	1 (5.8)

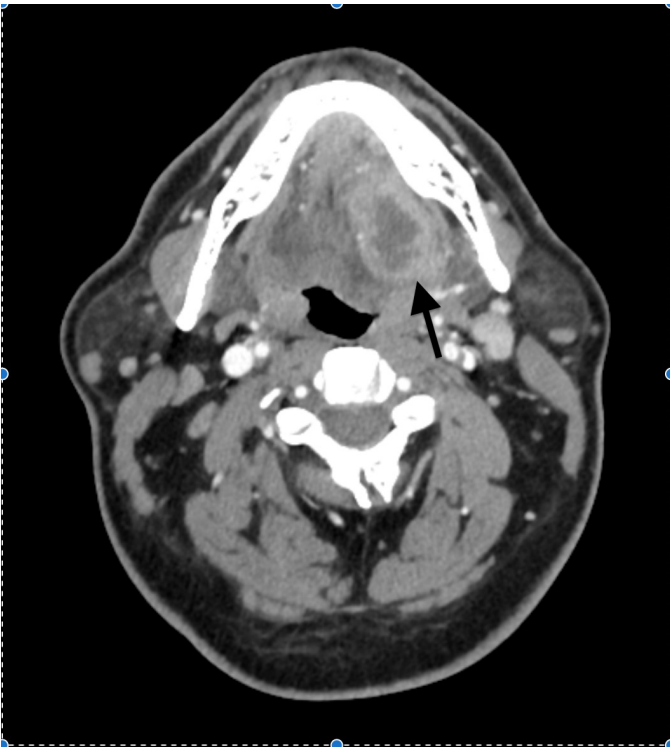


Figure 1. A contrast-enhanced axial computed tomography image showing a tongue abscess (arrow) characterized by a hypodense lesion with peripheral rim enhancement on the tongue.

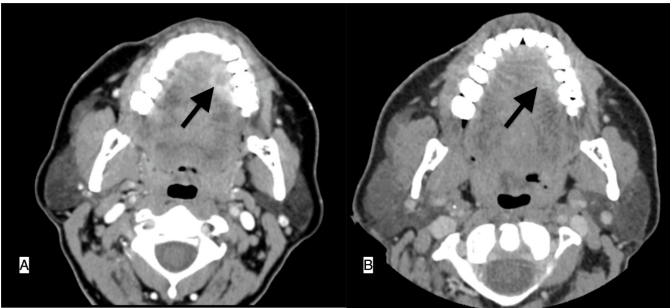


Figure 2. (A) Contrast-enhanced axial computed tomography image obtained before treatment shows a hypodense abscess with enhancement of the peripheral rim of the tongue (arrow). (B) Axial CT demonstrates near-complete resolution of the abscess on the ninth day after drainage (arrow).

strating marked abscess resolution following surgical drainage

(Figure 2).

Clinical course and treatment

Patients with posterior lingual abscess had a significantly longer hospital stay (9.29 ± 1.89 days vs. 6.7 ± 1.25 days, $p=0.004$). Drainage was attempted with similar success rates in both groups (anterior group, 80%; posterior group, 71.4%; $p = 1.000$). Patients who underwent drainage had significantly larger mean abscess diameters than those who did not (24.62 ± 11.21 mm vs. 14.75 ± 2.63 mm, $p=0.011$). Additionally, the length of hospital stay was significantly shorter in patients who underwent drainage than in those who did not (7.08 ± 1.49 days vs. 10.00 ± 1.82 days, $p = 0.005$). Although the mean volume of drained abscess material was higher in the posterior group (3.60 ± 2.88 mL vs. 2.50 ± 1.69 mL), the difference was not statistically significant ($p = 0.399$) (Table 1).

Etiological findings

The most common etiology of the abscess was idiopathic in both groups (70% in the anterior group, 57.1% in the posterior group). While infectious causes, such as acute tonsillitis and epiglottitis, were more common in the posterior group, trauma and odontogenic infections were more frequently identified in the anterior group (Table 1).

Laboratory findings

Comparison between anterior and posterior lingual abscess groups

White blood cell (WBC) and neutrophil counts at admission (day 0) were higher in the posterior group than in the anterior group (WBC: 15.42 ± 4.16 vs. 12.60 ± 2.01 , $p=0.136$; neutrophils: 12.20 ± 4.89 vs. 9.57 ± 2.41 , $p=0.226$), but these differences were not statistically significant. On day 5, however, the posterior group had significantly higher WBC counts (12.20 ± 2.97 vs. 8.88 ± 3.16 , $p=0.046$). Although the neutrophil counts also showed an increasing trend in the posterior group, the statistical significance was marginal ($p=0.051$). Lymphocyte and large unstained cell (LUC) counts were similar between the groups ($p>0.05$). CRP levels were higher in the posterior group on days 0 and 5 (CRP day 0: 74.93 ± 47.89 vs. 39.89 ± 21.52 , $p=0.105$), but these differences were not statistically significant (Table 3).

Comparison between patients with and without rim enhancement

When patients with rim enhancement on CT were compared with those without, no statistically significant differences in WBC, neutrophil, or CRP levels were observed on either day 0 or day 5 ($p>0.05$). However, day 5 LUC values were significantly lower in patients without rim enhancement (rim enhancement present: 0.17 ± 0.047 , absent: 0.13 ± 0.029 , $p=0.046$) (Table 3).

Comparison between patients with and without drainage

On day 5, WBC counts were significantly lower in patients who underwent drainage (9.31 ± 2.59 vs. 13.27 ± 4.48 ,

$p=0.039$). There were no statistically significant differences in other laboratory parameters (neutrophils, lymphocytes, LUC, CRP) between patients who did and did not undergo drainage ($p>0.05$) (Table 3).

Changes in laboratory parameters (Comparison between days 0 and 5)

When comparing changes in WBC, neutrophil, and CRP levels between the anterior and posterior groups from day 0 to day 5, no statistically significant differences were observed ($p>0.05$). However, a significant difference was observed in the change in WBC levels between patients who underwent drainage and those who did not. The reduction in WBC count was more pronounced in patients who underwent drainage (4.18 ± 2.96 vs. 1.36 ± 1.48 , $p=0.046$). No significant differences in neutrophil or CRP changes were observed between the groups.

No significant differences were observed in laboratory parameter changes based on the presence of rim enhancement (Table 4).

Microbiological culture results

According to the microbiological culture results from the abscess material, 23.5% of the samples showed no growth, and cultures were not obtained in another 23.5% of cases.

Among the positive cultures, *S. agalactiae* was the most frequently isolated pathogen (11.7%). Other *Streptococcus* species, including *Streptococcus anginosus*, *Streptococcus constellatus*, *Streptococcus hominis*, *Streptococcus mitis/oralis*, *Streptococcus salivarius*, *Streptococcus pneumoniae*, and *Streptococcus intermedius*, were isolated in 5.8% of samples (Table 5).

■ DISCUSSION

This study comprehensively evaluated the clinical, radiological, and laboratory characteristics of lingual abscesses according to their anterior and posterior localizations, the impact of drainage procedures on clinical outcomes, and the distribution of microbiological pathogens. Our findings demonstrated that lingual abscesses exhibit different clinical courses based on their anatomical localization, directly influencing clinical decision-making and management strategies.

Posterior lingual abscesses had larger dimensions and significantly longer hospital stays than anterior abscesses. The anatomical proximity to the base of the tongue renders posterior abscesses particularly hazardous regarding potential airway obstruction, thus necessitating prioritized clinical intervention. This observation aligns with reports in the literature from various case studies and small patient series [6]. Buendia et al reported that patients with posterior lingual abscesses frequently required emergent intubation and experienced delays in diagnosis. Our study objectively addresses these clinical risks, demonstrating significantly larger abscess diameters

and extended hospital stays in the posterior group than in the anterior group.

The significant decrease in WBC levels observed in patients undergoing drainage suggests rapid suppression of the systemic inflammatory response following the removal of infected material. Additionally, the notably shorter hospital stay in patients who underwent drainage indicates that drainage positively impacts not only laboratory parameters but also clinical recovery. This finding closely corresponds with Brook's (2004) concept of "early recovery through source control" [11,12]. Numerous studies have highlighted the critical role of early drainage in the successful management of head and neck infections [13,14].

Our study revealed that the presence of rim enhancement on contrast-enhanced CT scans, although commonly used to support abscess diagnosis, did not show a significant correlation with clinical severity or improvement in inflammatory laboratory markers. This suggests that rim enhancement may reflect the abscess' morphological features without necessarily indicating its clinical behavior or prognosis. In contrast, Liu et al. demonstrated that rim enhancement was significantly associated with positive surgical drainage in pediatric retropharyngeal abscess, emphasizing its potential role as a radiologic predictor of purulence rather than systemic severity. These differing findings may reflect anatomical and pathological distinctions between lingual and retropharyngeal abscesses and underscore the need for disease-specific imaging criteria in abscess evaluation [11].

The microbiological culture results revealed no microbial growth in 23.5% of the samples, whereas cultures were not obtained in another 23.5%. Among the positive cultures, *Streptococcus agalactiae* and other viridans group streptococci (e.g., *S. mitis*, *S. oralis*, and *S. salivarius*) were the most frequently isolated pathogens. This distribution suggests that lingual abscesses are predominantly derived from the oral flora. Brook (2002) highlighted streptococci and anaerobic bacteria as common causative agents in lingual and adjacent tissue abscesses, recommending beta-lactam/lactamase inhibitor combinations and agents such as clindamycin for empirical therapy [12]. Our inability to employ anaerobic culture techniques represents a limitation; however, even the aerobic flora data provide valuable guidance for treatment planning.

The multidisciplinary approach is especially crucial in cases of posterior lingual abscess, which may present with nonspecific symptoms and are often difficult to detect on physical examination alone. Early collaboration between otolaryngologists, anesthesiologists, and radiologists facilitates timely diagnosis and safe management of patients with cancer. Advanced imaging and endoscopic assessment are essential in guiding drainage procedures in the clinical setting, minimizing complications, and optimizing patient outcomes.

Limitations

This study is presented as a retrospective case series due to the rare nature of lingual abscesses and the small sample size. The statistical power for subgroup analyses is limited, and the clinical significance of subgroup comparisons should be interpreted with caution. The retrospective and single-center design further restricts the generalizability of our results. Although our findings provide valuable insights into the clinical course and management of lingual abscesses, larger prospective multicenter studies are needed to confirm these observations and better define the clinical relevance of subgroup differences.

CONCLUSION

In conclusion, a multidisciplinary approach is essential for the diagnosis and management of lingual abscess. In cases with posterior localization, airway monitoring must be prioritized, and urgent drainage and imaging support should be provided when necessary. Drainage procedures significantly reduce the inflammatory response and shorten hospital stays. Although radiological findings, such as rim enhancement, can support diagnosis, clinical and laboratory data should primarily guide treatment decisions. Detailed microbiological analysis is crucial for targeted antibiotic therapy. Considering the limited data available in the literature, advanced prospective and multicenter studies on lingual abscess are warranted.

Ethics Committee Approval: This retrospective cohort study was approved by the Ankara Bilkent City Hospital No. 2 Medical Research Scientific and Ethical Evaluation Board under approval number (TABED 2-25-1131).

Informed Consent: Informed consent was obtained from all participants.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The authors declare no conflict of interest.

Author Contributions: Conception: KSB, AO; Design: KSB, AO, FG; Supervision: TSDB, MAB; Materials: TSDB, BC; Data Collection and/or Processing: SS, FG, BC, AO; Analysis and/or Interpretation: KSB, FG; Literature Review: KSB, MAB, BC; Writing: KSB, TSDB, SS; Critical Review: SS, MAB.

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