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Correo electrónico:

actaorlgallega@gmail.com

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Caso Clínico

**Tongue abscess causing a septic shock:
an unusual complication of a rare entity**

**Abcesso lingual como causa de choque séptico:
uma complicação incomum de uma entidade rara**

Rita Gama, Leandro Ribeiro, Bruno Domingues, Francisco Monteiro,
Fernanda Castro, Artur Condé

Department of Otorhinolaryngology, Vila Nova de Gaia/Espinho Hos-
pital Center, Vila Nova de Gaia, Portugal

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Abstract

Background: The abscess of the tongue is a rare potentially life-threatening clinical entity, for which few reports exist in the literature. The individual surgeon usually lacks experience in the diagnosis and therapy of this condition.

Case report: This paper presents a case of tongue abscess in an patient who was doing prolonged corticoid therapy for rheumatoid arthritis that presented with tongue swelling, dysphagia, odynophagia, and speech difficulty. Diagnosis was obtained by clinical examination findings and CT. It was first decided to aspirate the pus with a needle. However, due to worsening of clinical status, a subsequent neck surgical incision and drainage of the abscess was needed.

Conclusion: Tongue abscesses are rare and dangerous conditions. We present this case to increase awareness among head and neck surgeons

Correspondencia: Rita Gama

Vila Nova de Gaia/Espinho Hospital Center
Correo electrónico: ritagama55@hotmail.com

of the clinical findings, pathophysiology, differential diagnosis and management of the disease.

Keywords: Tongue disease; mouth disease; abscess; septic shock.

Resumo

Introdução: O abscesso da língua é uma entidade potencialmente ameaçadora de vida, com poucos casos descritos na literatura. Dada a sua raridade, existe falta de experiência no seu diagnóstico e tratamento.

Caso clínico: Este artigo apresenta o caso de um abscesso lingual numa paciente sob terapia corticóide para uma artrite reumatóide. Apresentou-se com edema lingual exuberante, disfagia, odinofagia e dificuldade na produção do discurso. O diagnóstico foi obtido através do exame objetivo e de tomografia computadorizada. Inicialmente optou-se por aspirar o conteúdo purulento com uma agulha; no entanto, devido ao agravamento do estado clínico da doente, foi necessária uma incisão cervical para drenagem do abscesso.

Conclusão: Os abscessos linguais são entidades raras e perigosas. Apresenta-se este caso para aumentar o alerta entre os cirurgiões de cabeça e pescoço para os achados clínicos, fisiopatologia, diagnóstico diferencial e abordagem da doença.

Palavras-chave: Patologia lingual; patologia oral; abscesso; choque séptico.

Introduction

The tongue, as the most dominant structure of the oral cavity, is a frequent site of disease^{1,2}. Despite exposure to many potential pathogens, tongue is comparatively immune to infection and an unusual site of abscess³. Some of the reasons for this immunity include constant mobility of the tongue, the cleansing action of saliva, the thickness of the covering mucous membrane and its rich blood supply and lymphatic drainage^{3,4,5}. For those reasons, it occurs more often in persons with pierced tongues or in immunocompromised patients³. This clinical entity is not described in major textbooks, and in most cases, the physician who is faced with it has to solve the problem based on instinct rather than personal experience or general consensus. It is a potentially life-threatening clinical entity⁶; therefore, it must be recognized promptly and treated as a potential airway emergency, particularly if the abscess extends to the base of the tongue⁷. We present a case of an abscess located inside the musculature of the tongue, a rare location of an unusual condition, that was hard to diagnose and to manage.

Case report

A 49-year-old woman was admitted in the emergency service complaining of severe continuous pain and tongue swelling for 2 days, with associated dysphagia, odynophagia, and speech difficulty, but no dyspnea. She had voluntary fixation of tongue because of the pain. Seven days earlier, the patient had started a high-dose (100mg/day) corticosteroid-cycle (Deflazacort) therapy for an exacerbation of her rheumatoid arthritis. The medical history included severe smoking habits. The patient had no history of fever and chills. Additionally, she had no history of tongue bites or tongue trauma in the last 6 months. On clinical examination, the patient had significant swelling of the tongue, and drooling with painful lingual protrusion; it was also verified a neck edema with tenderness to palpation. Analytically, she presented leukocytosis (19.8×10^3 per μL) and high C-reactive protein (CRP), with no other relevant alterations. The neck ultrasound revealed an hypoechoic mass located in the middle line, deep in the centre of the tongue muscles, with 35x21mm, well-defined limits, and with characteristics of inflammatory process. Enhanced computed tomography (CT) scan was performed immediately, which revealed a bilobed collection with a 45x47x21mm, with enhanced walls, located in the thickness of the intrinsic muscles of the tongue. It crossed the midline, with the right side being more prominent. No cellulitis or foreign body was visualized (Figure 1).

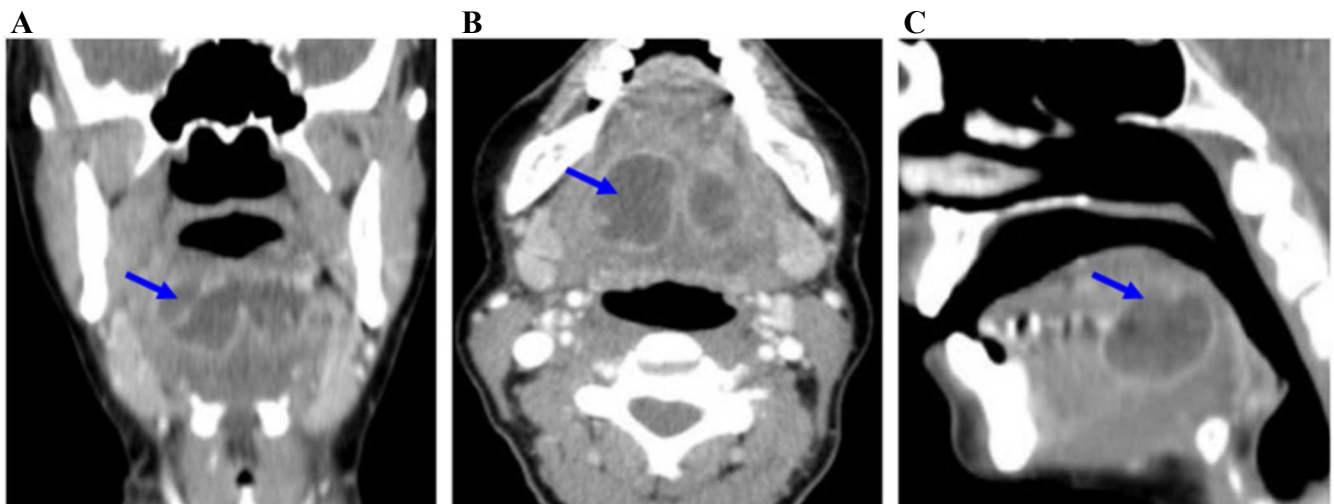
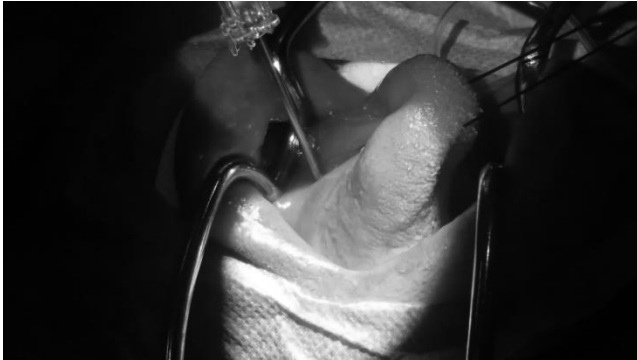


Figure 1: CT-scan image showing a large bilobed purulent collection with enhanced walls, located in the thickness of the intrinsic muscles of the tongue (**blue arrows**). A) Coronal plane, B) Axial plane, C) Sagittal plane .

Taking into account the risk of infection progression and consequent airway obstruction, it was decided to intubate the patient and to aspirate the content of the abscess under general anesthesia. It was performed an aspiration of 10cc of purulent exudate with a large-bore needle through the inferior surface of the tongue, lateral to the lingual frenulum and along the midline (Figure 2).

A



B



Figure 2: A) Large-bore needle aspiration through the inferior surface of the tongue, lateral to the lingual frenulum and along the midline. B) needle content of 10cc of purulent exudate.

The patient was treated with ceftriaxone 1000mg and clindamycin 600mg, anti-inflammatory drugs and dexamethasone 4mg. She remained intubated and, three days after the procedure, developed fever, hypotension, oligoanuria and metabolic disturbances, with increase inflammatory parameters and serum lactate level. A septic shock was diagnosed, and then quickly addressed and resolved in the Intensive Care Unit (ICU). The culture of the pus showed the presence of *Streptococcus anginosus*, sensible to Clindamycin. After stabilization of the patient, another CT-scan was done, which revealed persistence of the purulent collection inside the tongue muscles, with discrete reduced dimensions. It was then decided to perform a surgical drainage, through an arcuate cervical incision over the hyoid bone and approach to the supra-hyoid musculature; a large amount of pus was removed from the collections and 2 microtubular drains were left in each one of them, sutured to the skin. Immediate improvement of the patient's symptoms and analytic alterations was noted, and she was extubated after 3 days. The reevaluation CT demonstrated complete resolution of the infective process, with no content inside the tongue muscles. The drains were removed and the patient was discharged after 7 days with oral antibiotic therapy for 3 more weeks.

Discussion

Tongue abscesses are rarely described in clinical textbooks. Besides, most head and neck surgeons may never treat this kind of pathology⁸. The etiology of this kind of abscess is not well understood and several theories have been proposed for its pathophysiology, namely trauma, foreign bodies, dental infection or tonsillitis. Furthermore, poor oral hygiene, heavy smoking habits, immunodeficiency status, chemotherapy drugs, and diabetes mellitus are being suggested as predisposing factors^{9,10}. In our patient, the long-term corticosteroid therapy could have played an important role in the pathophysiology of the disease, in addition to her heavy smoking habits. The differential diagnosis of tongue abscess includes a wide range of pathologies, the most common being carcinoma, immunologic anaphylaxis, epiglottitis, dermoid cysts, lipoma, lingual tonsillitis and thyroglossal cyst^{11,12,13}. In less apparent posterior lesions, helpful findings include severe painful protrusion and protraction of the tongue, and severe painful palpation of the suprahyoid region and the hyoid bone. CT scan with contrast enhancement aids in distinguishing a lingual abscess from cellulitis or tumor¹⁴. An hypodensity lesion with contrast enhancement of the peripheral margins is a typical find. The management of lingual abscess must include, in all cases, ensuring airway patency, drainage of the abscess, and antibiotic therapy. Most authors recommend needle aspiration, due to surgical risks of exacerbating the edema of the tongue and deteriorate airway compromise^{3,6,8}. However, in the case presented, this approach was not enough. Unpredictably, the patient developed a septic condition after the first procedure, which evolved to septic shock, quickly addressed and resolved in the ICU. This worsening of the patient's clinical condition led to the need of an open surgical neck incision, performed after stabilization of the patient. This procedure provided access to the interior of the lingual musculature and allowed the drainage of the abscess cavity and further improvement of the patient's clinical state. In our case we first introduced an empirical bi-antibiotherapy directed against *Streptococcus*, *Staphylococcus*, *Haemophilus*, *Bacteroides*, and anaerobes species, which are the most common findings^{3,11} (third-generation cephalosporin and clindamycin). There is no consensus on length of antimicrobial therapy required⁸. In our case, we instituted a 3-week treatment. For posterior and profound abscess like in this case, diagnosis is difficult, and exposure and surgical drainage are technically difficult. Because the abscess extending to the base of the tongue can cause airway narrowing, as well as interference with swallowing, it requires anesthesia and endotracheal intubation for drainage. A needle aspiration or an open procedure should be performed without any delay.

Conclusions

Tongue abscess should be considered in patients who present with tongue swelling, dysphagia, odynophagia, and speech difficulty. Deep infection of the tongue is rare because of various factors contributing to local resistance. Clinical findings may suggest the diagnosis, but CT scan is needed to identify the lesion. Lingual abscess calls for prompt and aggressive management because it is a potentially life-threatening infection. Multi-antimicrobial therapy is the cornerstone of treatment. Surgical drainage is also of critical importance for preventing deeper spread of the infection toward the epiglottis and the larynx, or the hematogenous dissemination which may culminate in septic shock, a very dangerous condition which requires a prompt and appropriate approach.

Conflict of interest: Nothing to declare.

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