

Surgical Management of a Giant Hemangioma of the Tongue: A Case Report

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Case Report

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ABSTRACT

Introduction Hemangiomas are common benign vascular tumors primarily. They are characterized by a proliferation of endothelial cells, forming a space filled with blood and lined by endothelial tissue. Various therapeutic modalities have been described, ranging from observation to corticosteroid therapy, beta-blocker drug therapy, sclerotherapy, cryotherapy, isotopic radiotherapy, laser therapy, and surgical excision. Our aim is to describe the management approach for a 43-year-old man presenting with a significant vascular malformation of the tongue through a partial median glossectomy with anteriorly pointed triangular excision.

Case report We report the case of a 43-year-old patient who presented a large congenital mass occupying almost the entire mobile tongue. MRI demonstrated a large lesion of the tongue, suggestive of a vascular malformation. Angiography was crucial for treatment planning. Subsequently, a partial midline glossectomy with triangular excision at the anterior tip was performed, followed by suturing of the residual stumps with absorbable Vicryl 3.0.

Histopathological examination concluded it to be a cavernous hemangioma.

Discussion There is no single systematic technique to treat all presentations of macroglossia. We report a case of a patient who benefit of a partial midline glossectomy with triangular anterior tip excision was performed to address both length and width, preceded by elective ligation of the lingual artery to enhance surgical field clarity for adequate resection.

Key Words: Hemangiomas, tongue, glossectomy, macroglossia

Received: 25 May 2024, **Accepted:** 24 January 2025.

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ISSN: 2090-097X, January 2025, Vol. 16, No. 1

INTRODUCTION

Hemangiomas are common benign vascular tumors primarily observed in newborns, infants, and children. These tumors are classified into infantile and congenital hemangiomas, with congenital hemangiomas further subdivided into rapidly involuting, partially involuting, and non-involuting types. While they frequently affect the skin of the cervicofacial region, they are less common in the oral cavity and oropharynx. They are characterized by a proliferation of endothelial cells, forming a space filled with blood and lined by endothelial tissue ^[1,2].

Various therapeutic modalities have been described, influenced by several factors such as the size and location of the lesion, its progression, and the presence of complications, ranging from observation to corticosteroid therapy, beta-blocker drug therapy, sclerotherapy, cryotherapy, isotopic radiotherapy, laser therapy, and surgical excision.

Whenever complete excision is not feasible, reducing the size of the lesion becomes the primary goal to improve the patient's quality of life. Additionally, other therapies such as beta-blockers, corticosteroids, or injectable treatments may be considered.

Our aim is to describe the management approach for a 43-year-old man presenting with a significant vascular malformation of the tongue through a partial median glossectomy with anteriorly pointed triangular excision.

CASE REPORT

We report the case of a 43-year-old patient with no notable medical history, who presented to our institution with a large congenital mass occupying almost the entire mobile tongue (Figure 1). Our patient reported speech impediment, swallowing difficulty, and nocturnal snoring with occasional apneas. Additionally, the patient experienced intermittent bleeding caused by accidental Initially, a trial

treatment with beta-blockers did not significantly reduce the size of the lesion. Therefore, surgical intervention was scheduled. After multidisciplinary consultation, subtotal resection was deemed the most appropriate approach to restore proper function. The surgical procedure was performed using standard oro-facial surgery setup, with shoulder bolster and wide draping covering the entire oro-facial and cervical region, starting with nasotracheal intubation guided by naso-endoscopy. Our surgery involved a lateral incision under the right angle of the mandible, allowing us to locate and ligate the right lingual artery, the main vascular supply (Figure 4). Subsequently, a partial midline glossectomy with triangular excision at the anterior tip was performed, followed by suturing of the residual stumps with absorbable Vicryl 3.0. At the end of the procedure, a temporary tracheostomy was performed to ensure airway safety during the initial postoperative period and swallowing rehabilitation, while a nasogastric tube was applied. Postoperative recovery was uneventful. The tracheostomy was removed two days later, and the patient resumed oral intake after one week. Histopathological examination concluded it to be a cavernous hemangioma. Quarterly follow-up during the first year post-surgery showed significant improvement in tongue position intraorally as well as in phonation, swallowing, and breathing functions (Figure 5).



Figure 1

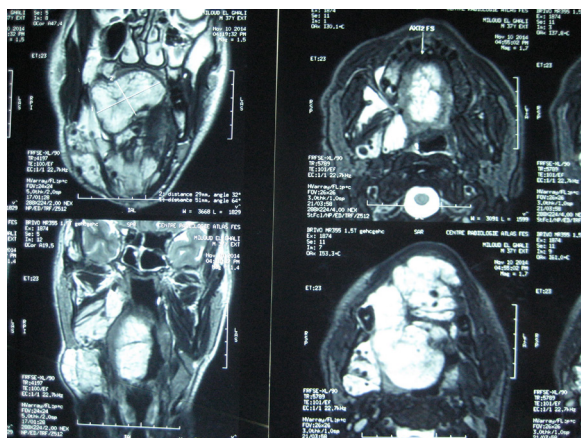


Figure 2

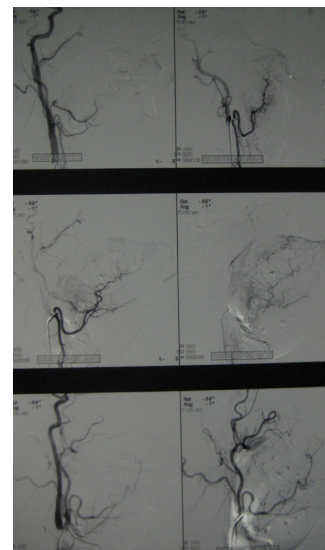


Figure 3



Figure 4



Figure 5

DISCUSSION

The term hemangioma has been commonly misused to describe a large number of vascular tumors. These lesions are more frequently diagnosed in infancy and childhood. Moreover, it may vary in size from small innocent birthmarks to large disfiguring lesions. These lesions are characterized by hyperplasia of blood vessels, usually veins and capillaries in a focal area of submucosal connective tissue. The majority of hemangiomas are located in the head and neck area. However, they are rare in the oral cavity^[1,2,3].

When it comes to locations on the tongue, in the majority of cases, cosmetic concerns are often the primary focus, but functional challenges should not be overlooked such as difficulty swallowing and breathing, bleeding and ulceration. When planning the treatment for hemangiomas, it's crucial to consider factors such as size, location, lesion hemodynamics, patient age, and the suitability of the chosen technique^[4]. While systemic corticosteroids have been recognized as highly effective in treating common cutaneous infantile hemangiomas, their prolonged use can result in notable side effects^[4]. Beta blockers such as propranolol have emerged as promising options for impeding hemangioma proliferation. However, the precise mechanism of their action remains unclear^[5].

malformations, preoperative embolization followed by surgical resection is often the. Intralesional injection of sclerosing agents, such as bleomycin, can be effective for limited lesions, although multiple injections may be necessary, and complete resolution rates are around 49%^[3]. For advanced vascular preferred approach, especially if medical treatments have been ineffective^[6].

Surgical management may be justified in cases of compromised airways, the most critical complication of macroglossia, but also in cases of other associated morbidities, including issues related to function, feeding, and aesthetics. The patient's case presented in this case report exhibited most of these signs and symptoms.

Different surgical techniques have been described to deal with macroglossia^[7]. The principle of the surgery is to produce a tongue that fits within the dental arches and improve its functionality.

There is no single systematic technique to treat all presentations of macroglossia. Dorsal resection is described for reduction in width and height, while lateral resections target only width and anterior resections act on length.

In the case described in our study, the hemangioma's size was massive, almost occupying the entire tongue. Therefore, radical resection was not the goal of the proposed surgical treatment, as a very wide excision seemed unfeasible without considering potential reconstruction and its associated drawbacks for the patient's quality of life.

Thus, a partial midline glossectomy with triangular anterior tip excision was performed to address both length and width, preceded by elective ligation of the lingual artery to enhance surgical field clarity for adequate resection. We focused on excising a significant portion of the lesion to restore airway patency, improve swallowing and speech function, and enhance the patient's aesthetics.

Due to the nature, size, and location of the aforementioned lesion, it could be considered a potentially life-threatening condition due to the major risk of compromising the airways^[8,9]. The decision to perform elective ligation of the lingual artery was made to improve bleeding control during the procedure. An adequate reconstruction of the residual stumps of the tongue was carefully performed by bringing the two stumps together in three planes using Vicryl 3.0. After more than a year of follow-up the patient has restored a proper swallowing and respiratory function, improved the speech articulation and aesthetic issues, and gained a better quality of life. The patient is followed up with annual consultation and MRI with contrast in order to assess the stability of residual lesions.

CONCLUSION:

In summary, the treatment modality should be planned according to the diagnosis and prognosis of the particular vascular malformation. Despite significant intraoperative bleeding and potential airway obstruction, surgical outcomes tend to be more reliable compared to medical alternatives. Surgical interventions for macroglossia are a viable option when benign vascular lesions of the tongue persist despite other treatments.

Preoperative measures such as embolization can help mitigate bleeding during surgery and improve postoperative reconstruction, which justified our decision to perform ligation of the lingual artery in the absence of this option.

Competing interests

The authors declare no competing interests.

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