Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Maxillofacial Surgery

Masseter Hemangioma: A Case Report

Benwadih Sarra[1*], Anagam Manal[1], Boukhlouf Oumaima[1], Bouchra Dani[1], Malik Boulaadas[1]

[1]Maxillofacial Surgery Department, Hospital of Specialties, Mohammed V University, Rabat, Morocco

DOI: https://doi.org/10.36347/sjmcr.2025.v13i01.020 | **Received:** 07.12.2024 | **Accepted:** 11.01.2025 | **Published:** 15.01.2025

***Corresponding author:** Benwadih Sarra
Maxillofacial Surgery Department, Hospital of Specialties, Mohammed V University, Rabat, Morocco

Abstract **Case Report**

Masseter hemangiomas are rare benign vascular tumors that arise from the proliferation of endothelial cells within the masseter muscle. While hemangiomas account for a significant proportion of vascular anomalies, intramuscular hemangiomas are exceedingly uncommon, particularly in the masseter region, which represents the most frequent site in the head and neck. Intense stretching of muscle fibers and associated nerves is believed to be a predisposing factor. This study aims to discuss the clinical presentation, diagnostic challenges, and management of masseter hemangiomas. We report a case of a patient diagnosed with a masseter hemangioma, treated successfully.

Keywords: Masseter Hemangioma, Intramuscular Hemangioma, Vascular Tumor, Endothelial Cells, Head and Neck.

INTRODUCTION

Hemangiomas are benign vascular tumors characterized by a non-malignant proliferation of endothelial cells leading to the formation of new blood vessels. Their development may be linked to somatic mutations in stem cells or endothelial cells of placental origin [1]. Intramuscular skeletal hemangiomas are exceedingly rare, accounting for less than 1% of cases [1]. Among these, hemangiomas of the masseter muscles are the most frequently observed in the head and neck region [2].

Intense stretching of the muscle fibers and associated nerves in the masseter muscles has been suggested as a contributing factor [2]. The standard treatment for masseter hemangiomas is surgical excision via an extraoral approach, which often requires a parotidectomy and careful dissection of the facial nerve branches [3].

Here, we present a case of a masseter hemangioma successfully treated using an intraoral surgical approach, highlighting the advantages of this less invasive technique.

CASE REPORT

A 15-year-old female patient with no significant medical history presented with a progressive swelling in the right cheek region, evolving over several years and gradually causing aesthetic discomfort. She reported no prior history of trauma to the affected area. The swelling was intermittently painful, with the pain worsening as the mass increased in size. Symptoms were accentuated at puberty.

The mass was in the right masseteric region, extending anteriorly into the cheek area. The overlying skin was healthy, without signs of inflammation or visible collateral venous circulation (Fig 1). On palpation, the mass was firm, painless, well-defined, and measured approximately 4 cm in its largest dimension, with phlebolitis. The swelling became more prominent when the patient tilted her head, with a positive "wattle sign." Imaging studies suggested a vascular tumor originating from the masseter muscle.

Surgical excision was performed via an intraoral approach, involving complete tumor removal, resection of two-thirds of the masseter muscle, and preservation of Stensen's duct. Histopathological examination confirmed the diagnosis.

The postoperative course was favorable, with no complications observed during a four-month follow-up period.

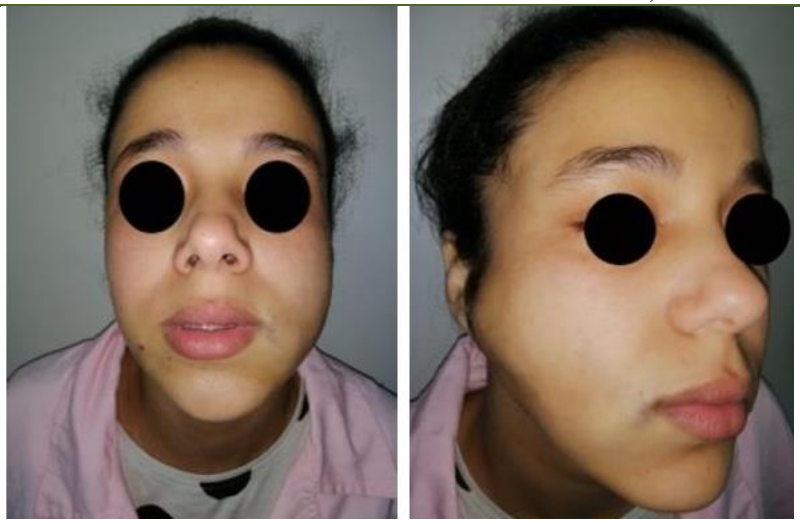

Fig 1: Preoperative photographs showing a mass in the right masseteric region

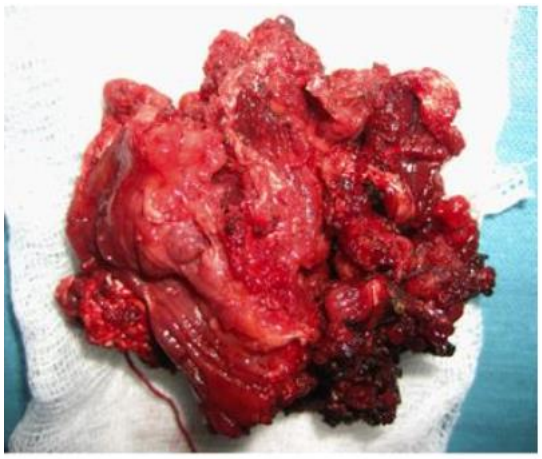

Fig 2: Surgical piece

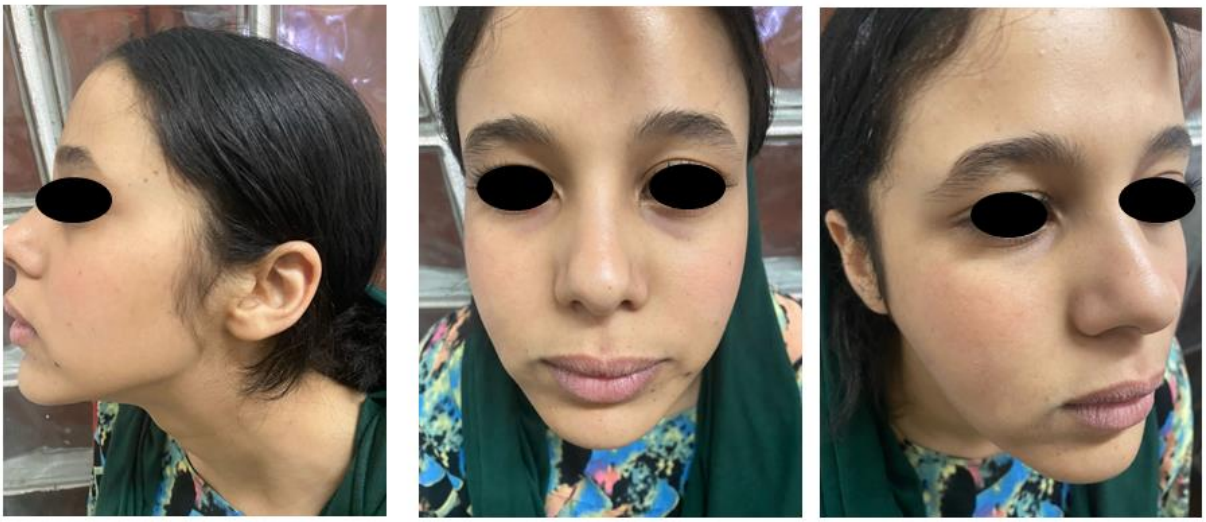

Fig 3: Post operative pictures

DISCUSSION

The exact cause of hemangiomas remains unknown. A congenital origin is often hypothesized, potentially triggered by hormonal or post-traumatic factors [1]. Intramuscular hemangiomas are rare, most frequently occurring in the pelvic region. Only 10% of cases are localized to the face and neck [4]. Among these, masseteric hemangiomas show a male predominance,

with 90% of cases occurring in individuals under the age of 30 [5].

The primary symptom is typically a swelling, which may intermittently become painful. The characteristic pulsatile nature and thrill of the lesion can be obscured by the thickness of the muscle layer. However, a positive "wattle sign," where the swelling increases in size when the patient tilts their head forward, is highly suggestive of the diagnosis.

Magnetic Resonance Imaging (MRI) is the preferred imaging modality for evaluating these vascular anomalies, as it allows precise assessment of the tumor's extension into adjacent structures. Non-surgical therapeutic options have been explored, including cryotherapy, corticosteroid or sclerosing agent injections, embolization, arterial ligation, and radiotherapy. However, these methods yield inconsistent results and are typically reserved for cases where surgery is contraindicated or declined by the patient [3].

Complete surgical resection, with excision extending into adjacent healthy tissues, remains the most effective treatment, leading to definitive healing. Indications for surgery include significant tumor volume, aesthetic or functional discomfort, skin necrosis, or hemorrhage [1, 4].

Several non-surgical therapeutic options have been proposed, including cryotherapy, corticosteroid injections, sclerosing agents, embolization, arterial ligation, or radiotherapy. However, these methods have shown inconsistent results [6] and are generally reserved for cases where surgery is contraindicated or declined by the patient [3].

Complete surgical resection, extending into adjacent healthy tissues, is the definitive treatment and ensures a cure. Indications for surgery include a large tumor volume, aesthetic and/or functional discomfort, skin necrosis, or hemorrhage [1, 4]. Preoperative embolization, performed 48 to 72 hours before surgery, improves operative conditions by reducing tumor size and minimizing the risk of bleeding.

Several surgical approaches have been described. The most commonly used is the external temporo-auricular or temporo-auriculo-cervical route, which provides excellent surgical exposure. However, it has notable drawbacks, including the need for parotidectomy with dissection of the facial nerve branches [3], exposing the patient to potential postoperative facial nerve paresis that can last several months. Additionally, the resulting scar is significant.

The intraoral approach offers a viable alternative for the resection of intra-masseteric hemangiomas. This technique does not appear to increase complications compared to the extraoral route. A mucosal incision is made anterior to the opening of Stensen's duct, providing direct access to the lesion, allowing precise localization, effective bleeding control, and complete excision of the hemangioma. This approach eliminates the need for facial nerve dissection and avoids visible scarring.

The main risk associated with the intraoral approach is injury to the maxillary artery or the pterygoid venous plexus, which can be prevented with careful and meticulous dissection.

Postoperative physical therapy is essential to prevent or minimize muscle contractures that could limit mouth opening. Recurrence may occur in cases of incomplete tumor resection [3].

CONCLUSION

Masseter hemangiomas, though rare, should be considered in the differential diagnosis of persistent cheek swelling, particularly in young patients presenting with intermittent pain and a positive "wattle sign." MRI remains the imaging modality of choice, offering detailed evaluation of tumor extent and its relationship with surrounding structures.

While non-surgical therapies may be considered in select cases, complete surgical excision remains the gold standard for achieving definitive treatment, especially when the tumor causes significant aesthetic or functional concerns. The intraoral approach offers a safe, effective, and minimally invasive alternative to traditional extraoral techniques, avoiding facial nerve dissection and external scarring while ensuring precise tumor removal.

Early diagnosis and appropriate management are crucial to minimize complications and improve outcomes, underscoring the importance of a tailored, patient-specific approach in the treatment of masseter hemangiomas.

Declaration of Competing Interest

None declared. The authors have no financial, consultative, institutional and other relationships that might lead to bias or conflict of interest.

REFERENCES

1. Mandel, L., & Surattanont, F. (2004). Clinical and imaging diagnoses of intramuscular hemangiomas: the wattle sign and case reports. *Journal of oral and maxillofacial surgery*, *62*(6), 754-758.
2. Allen, P. W., & Enzinger, F. M. (1972). Hemangioma of skeletal muscle. An analysis of 89 cases. *Cancer*, *29*(1), 8-22.
3. Capote, A., Acero, J., García-Recuero, I., Rey, J., Guerra, B., & de Paz, V. (2008). Infratemporal-preauricular-cervical approach for resection of a cavernous intramasseteric hemangioma: a case

report. *Journal of oral and maxillofacial surgery*, *66*(11), 2393-2397.

4. Kanaya, H., Saito, Y., Gama, N., Konno, W., Hirabayashi, H., & Haruna, S. I. (2008). Intramuscular hemangioma of masseter muscle with prominent formation of phleboliths: a case report. *Auris Nasus Larynx*, *35*(4), 587-591.
5. Hart, B., & Schwartz, H. C. (1995). Cavernous hemangioma of the masseter muscle: report of a case. *Journal of oral and maxillofacial surgery*, *53*(4), 467-469.
6. Collin, A. C., Viremouneix, L., Guibaud, L., & Breton, P. (2010). Intraosseous arteriovenous malformations. *Revue de Stomatologie et de Chirurgie Maxillo-faciale*, *111*(1), 11-18.