

Priscila Faquini Macedo<sup>1,2</sup>   
 Yuri de Lima Medeiros<sup>3</sup>   
 Dandara Menezes de Aratújo Oliveira<sup>4</sup>   
 Lívia Marques dos Santos<sup>2</sup>   
 Daniel Amaral Alves Marlière<sup>2,5,\*</sup> 

# Giant oral lipoma: a rare case report involving the masseter muscle

## Abstract

Lipoma is a benign neoplasm that primarily affects middle-aged individuals and is rare in the maxillomandibular region. Most lipomas are between 2 and 15 mm in diameter. Although rare, they can reach large dimensions and cause aesthetic and functional problems such as dysphonia, dysphagia, and facial asymmetry. We report a case of an extensive lipoma invading the masseter muscle region with a 2-year history in a 36-year-old man who underwent surgery under general anesthesia. A well-circumscribed neoplasm composed of mature adipocytes with a thin fibrous capsule was seen on histopathology analysis. The 6-month follow-up showed good healing without recurrence.

**Keywords:** Lipoma; Buccal mucosa; Oral neoplasms; Masseter muscle.

## INTRODUCTION

Lipomas are the most common benign mesenchymal neoplasms, accounting for approximately one-third of all benign tumors. They can occur in any part of the human body. However, only 1 to 4% occur in the maxillomandibular region<sup>1,2</sup>. The most common region of occurrence was the buccal mucosa, followed by the tongue, lip and palate. Muscle infiltration of the tumor in this region represents only 3–7% of these cases, proving to be extremely rare<sup>3</sup>.

Clinically, they may present as deep nodules and are more common on the tongue, lips, palate, and buccal mucosa<sup>2</sup>. Most lipomas are between 2 and 15 mm in diameter and grow slowly and painlessly<sup>4</sup>. Although rare, they can reach large dimensions and cause aesthetic-functional problems such as speech difficulties, dysphagia, and facial asymmetry<sup>5</sup>. The aim of this manuscript was to report the surgical

treatment of a case of extensive lipoma in the masseter muscle region in a middle-aged man.

## CASE REPORT

This study was approved by the Research Ethics Committee of the University Hospital of Federal University of Juiz de Fora, under protocol n° 6,809,629, in compliance with the Declaration of Helsinki of the World Medical Association.

A 36-year-old melanodermic male patient without systemic alterations or relevant family history was

referred to the Oral and Maxillofacial Surgery Service of the University Hospital of the Federal University of Juiz de Fora (HU-UFJF/EBSERH, Juiz de Fora, Minas Gerais, Brazil) with a complaint of asymptomatic swelling on the right side of the face of 2 years' duration.

On extraoral clinical examination, there was an increase in volume in the lower right region of the

Lipomas in the maxillomandibular region can have aesthetic and functional consequences depending on their size and location. When extensive lipomas infiltrate the masseter muscle region, they appear as an increase in facial volume with a soft consistency. Surgical excision has been shown to be effective. Long-term follow-up is important because of the risk of lesion recurrence.

<sup>1</sup>Faculty of Medical and Health Sciences of Juiz de Fora – Juiz de Fora (MG), Brazil.

<sup>2</sup>University Hospital, Federal University of Juiz de Fora – Juiz de Fora (MG), Brazil.

<sup>3</sup>Department of Stomatology, School of Dentistry, University of São Paulo – São Paulo (SP), Brazil.

<sup>4</sup>Department of Epidemiology and Statistics, A.C.Camargo Cancer Center – São Paulo (SP), Brazil.

<sup>5</sup>Department of Dental Clinic, School of Dentistry, Federal University of Juiz de Fora – Juiz de Fora (MG), Brazil.

\*Correspondence to: E-mail: ctbfm.marliere@gmail.com

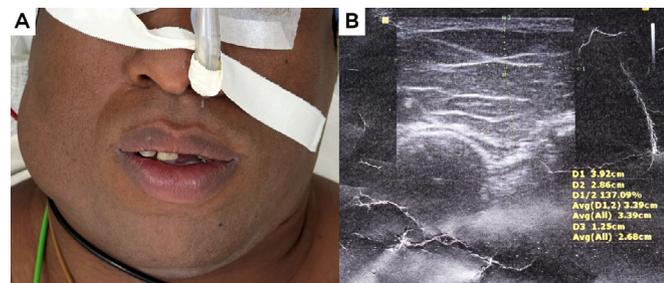
Received on August 6, 2024. Accepted on September 17, 2024.

<https://doi.org/10.5327/2525-5711.250>

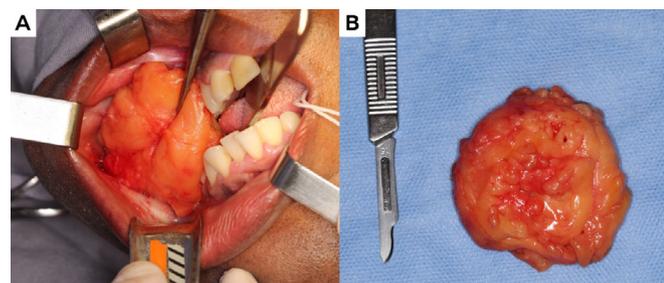


face with a soft consistency on palpation (Figure 1A). There were no intraoral changes. There was no evidence of paresthesia, cervical lymphadenopathy, or trismus. An ultrasound was requested, which revealed a nodular, isoechoic, firm, circumscribed, elongated, lipid-appearing mass in the right genian region, measuring 40 x 28 mm (Figure 1B). The main diagnostic hypothesis was lipoma, but schwannoma and rhabdomyoma were also considered.

Surgical excision was performed under general anesthesia with nasotracheal intubation. Infiltration with a 1:200,000 solution of lidocaine and epinephrine was performed, and an intraoral incision was made in the right buccal mucosa with dissection of the buccinator muscle and excision of a large yellowish nodule located lateral to the masseter muscle (Figure 2A-B). Histopathologic examination revealed a well-circumscribed neoplasm composed of mature adipocytes with the presence of a thin fibrous capsule (Figure 3). The histopathologic diagnosis was conventional lipoma. The patient was followed up for 6 months with favorable evolution, demonstrating no postoperative complications and a good clinical aspect of the healing process (Figure 4).



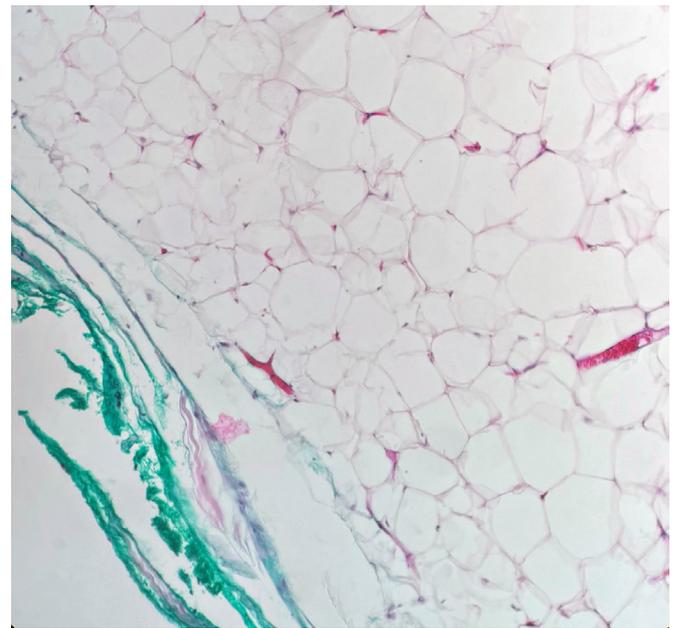
**Figure 1.** (A) Extraoral clinical appearance showing an increase in volume in the lower right region of the face. (B) Ultrasound examination showed a nodular, isoechoic, firm, circumscribed and elongated mass in the right genian region.



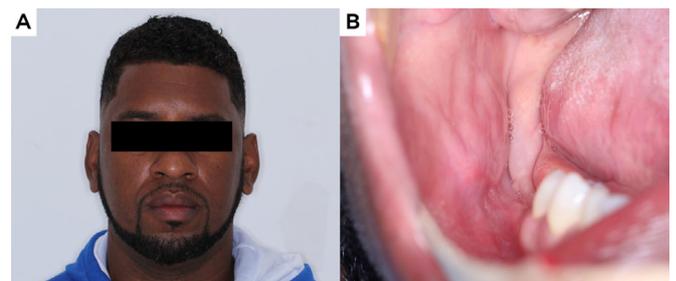
**Figure 2.** (A) Trans-surgical appearance, demonstrating removal of an extensive yellowish mass. (B) Specimen sent for histopathologic analysis.

## DISCUSSION

Lipoma is a benign neoplasm of mesenchymal origin that accounts for approximately 30% of all benign tumors. It is most commonly found on the trunk, shoulders, neck, and axilla. Only 13% occur in the head and neck region and are rarely observed in the maxillo-mandibular region. Lipomas may invade or grow in muscle regions and are referred to as intramuscular or infiltrating lipomas<sup>5</sup>. Only one case of intramuscular lipoma in the masseter muscle region was found in the literature<sup>6</sup>. In our case, although there was invasion into the masseter region, trans-surgical observations revealed separation of the lesion from the deeper muscle tissue. In addition, the histopathologic sections showed a well-circumscribed lesion separated from the muscle



**Figure 3.** Histopathologic aspects of the lesion showing a well-circumscribed neoplasm composed of mature adipocytes with a thin fibrous capsule (100x, H&E).



**Figure 4.** Postoperative aspects at 6 months in (A) extraoral and (B) intraoral views.

---

bundles. Therefore, although there was invasion into the masseter region, the histopathologic diagnosis of intramuscular lipoma was excluded.

Because most lipomas grow slowly, they are usually less than 20 mm in diameter<sup>3,7</sup>. However, they can occasionally reach large dimensions. The signs and symptoms of large lipomas vary depending on the depth of the lesion. Large intraoral lipomas are usually more visible and palpable superficially, whereas deep localized lipomas are not externally visible until they reach a significant size. Therefore, the overlying skin or superficial structures are rarely affected. Intraoral lipomas may interfere with speech, chewing, and tongue movement, but are rarely painful. Deep lipomas tend to be asymptomatic for long periods of time but may cause symptoms if there is compression of nerves or internal structures<sup>5,7</sup>. Our clinical case was considered an unusually large lipoma, measuring approximately 40 mm in its largest diameter.

Preoperative diagnosis is based on the clinical aspect of the lesion, which usually presents as a nodular lesion with a sessile base, well-defined and soft in consistency, and may be yellowish in color<sup>8</sup>. In our case, due to its deep location, the patient presented only asymmetry with no intraoral clinical changes. In such cases, other methods can be used to aid diagnosis, such as fine needle aspiration biopsy, magnetic resonance imaging, and ultrasonography. In our case, we decided to perform ultrasonography. In this examination, the lesion usually presents as a homogeneous and hypoechoic mass, ovoid or lobulated<sup>1,9</sup>.

Definitive diagnosis and treatment of lipomas is performed by surgical excision of the lesion followed by histopathologic analysis<sup>7,8</sup>. From a histopathologic point of view, according to the World Health Organization, lipomas can be classified based on their histopathologic characteristics as conventional lipoma or its variants: angiolipoma, myolipoma, chondroid lipoma, spindle cell/pleomorphic lipoma, and intramuscular or infiltrating lipoma<sup>10</sup>. Histologically, as in our case, conventional lipomas consist of adipocytes with a uniform nucleus and sparse connective tissue and are the most common subtype<sup>1</sup>.

Lipomas that invade muscle regions have higher recurrence rates after surgical treatment due to inadequate excision combined with an unencapsulated lesion<sup>3,7</sup>. However, to our knowledge, there is only one case of recurrence of this type of lipoma in the head and neck region<sup>11</sup>. It is suggested that in addition to long-term follow-up, the lesion should be removed with the fibrous capsule covering it to prevent cases of recurrence<sup>7,8</sup>.

## CONCLUSION

Despite being a benign neoplasm, lipomas in the maxillomandibular region can have aesthetic and functional consequences depending on their size and location. Surgical excision has been shown to be effective in the treatment of extensive lipomas infiltrating the masseter muscle region. Long-term follow-up is important due to the risk of lesion recurrence.

## AUTHORS' CONTRIBUTIONS

PFM: conceptualization, data curation, formal analysis, investigation, writing – original draft. YLM: conceptualization, data curation, formal analysis, investigation. DMAO: conceptualization, data curation, formal analysis, investigation. LMS: conceptualization, investigation, methodology, writing – review & editing. DAAM: conceptualization, methodology, project administration, supervision, validation, visualization, writing – review & editing.

## CONFLICT OF INTEREST STATEMENT

**Funding:** This study was not supported by any funding.

**Competing interests:** The authors declare that they have no conflict of interest.

**Ethics approval:** The Research Ethics Committee of the University Hospital of Federal University of Juiz de Fora, approved this study – Protocol n°. 6,809,629. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Availability of data and materials:** The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

**Code availability:** This study did not use any software applications or custom code in the preparation of our article.

## REFERENCES

1. Priya M, Doomra S, Angral S, Malhotra M, Varshney S, Gupta MK, et al. Head and neck lipomas at uncommon subsites: a series of four cases. *Indian J Otolaryngol Head Neck Surg.* 2022;74(Suppl 2):1845-9. <https://doi.org/10.1007/s12070-020-01866-1>
2. De Sanctis CM, Zara F, Sfasciotti GL. An unusual intraoral lipoma: a case report and literature review. *Am J Case Rep.* 2020;21:e923503. <https://doi.org/10.12659/AJCR.923503>

- 
3. Egado-Moreno S, Lozano-Porras AB, Mishra S, Allegue-Allegue M, Marí-Roig A, López-López J. Intraoral lipomas: review of literature and report of two clinical cases. *J Clin Exp Dent*. 2016;8(5):e597-e603. <https://doi.org/10.4317/jced.52926>
  4. Azzouz Y, Abidi S, Zidane FZ, Chbicheb S. An unusual intraoral lipoma: case report and review of the literature. *Pan Afr Med J*. 2022;41:336. <https://doi.org/10.11604/pamj.2022.41.336.34808>
  5. Ponce JB, Ferreira GZ, Santos PSS, Lara VS. Giant oral lipoma: a rare entity. *An Bras Dermatol*. 2016;91(5 suppl):84-6. <https://doi.org/10.1590/abd1806-4841.20165008>
  6. Tsumuraya G, Yamada H, Shimizu H, Hamada Y. Intramuscular lipoma in the masseter muscle: a case report. *Br J Oral Maxillofac Surg*. 2014;52(4):e21-3. <https://doi.org/10.1016/j.bjoms.2014.01.013>
  7. Yoon YA, Kwon YE, Choi SY, Choi KS, An CH, An SY. Giant lipoma of the tongue: a case report and review of the literature. *Imaging Sci Dent*. 2022;52(1):117-21. <https://doi.org/10.5624/isd.20210140>
  8. Sakamoto Y, Oyama G. Giant lipoma presents from the buccal vestibule. *Case Rep Dent*. 2020;2020:8824548. <https://doi.org/10.1155/2020/8824548>
  9. Mohan KR, Fenn SM, Thangavelu RP, Vyapaka P. A “V”-shaped intraoral lipoma on the floor of the mouth: a case report. *Cureus*. 2022;14(10):e30260. <https://doi.org/10.7759/cureus.30260>
  10. World Health Organization. International Agency for Research on Cancer. WHO classification of tumours. Soft tissue and bone tumours. 5th ed. Lyon: IARC Press; 2020.
  11. Scherl MP, Som PM, Biller HF, Shah K. Recurrent infiltrating lipoma of the head and neck. Case report and literature review. *Arch Otolaryngol Head Neck Surg*. 1986;112(11):1210-2.