CASE REPORT OLGU SUNUMU

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Treatment of a Massive Oral Lipoma Involving Branches of the Mental Nerve: A Rare Case Report

Mental Sinir Dallarını İçeren Masif Oral Lipomun Tedavisi: Nadir Bir Olgu Sunumu

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ABSTRACT Oral lipomas are rare, benign mesenchymal tumors that typically present as slow-growing, painless masses in the oral cavity. Although their etiology remains unclear, genetic predisposition, trauma, and metabolic factors have been proposed. Most cases are asymptomatic, but lipomas located near neurovascular structures, such as the mental nerve, may affect oral function, chewing, or sensory perception. Diagnosis relies on clinical examination and histopathological analysis, with magnetic resonance imaging and computed tomography providing valuable information on tumor margins and adjacent structures. Given their histological similarities to other soft tissue tumors, differential diagnosis is essential to rule out salivary gland neoplasms, oral lymphoepithelial cysts, and other benign mesenchymal lesions. The gold standard of treatment is surgical excision of the lesion. This study discusses the diagnostic approach, differential diagnosis, and surgical considerations for oral lipomas, emphasizing the importance of accurate imaging and meticulous surgical planning to optimize outcomes and minimize complications.

Keywords: Fatty tumor; adipocytes; mandibular nerve

ÖZET Oral lipomlar, tipik olarak oral kavitede yavaş büyüyen, ağrısız kitleler olarak ortaya çıkan nadir, benign mezenkimal tümörlerdir. Etiyolojileri net olmamakla birlikte genetik yatkınlık, travma ve metabolik faktörler öne sürülmüştür. Çoğu olgu asemptomatiktir, ancak mental sinir gibi nörovasküler yapıların yakınında bulunan lipomlar oral fonksiyonu, çiğnemeyi veya duyusal algıyı etkileyebilir. Tanı, klinik muayene ve histopatolojik analize dayanır; manyetik rezonans görüntüleme ve bilgisayarlı tomografi, tümör sınırları ve komşu yapılar hakkında değerli bilgiler sağlar. Diğer yumuşak doku tümörleriyle histolojik benzerlikleri göz önüne alındığında, tükürük bezi neoplazmlarını, oral lenfoepitelyal kistleri ve diğer benign mezenkimal lezyonları ekarte etmek için ayırıcı tanı esastır. Tedavide altın standart, lezyonun cerrahi eksizyonudur. Bu çalışmada, oral lipomlar için tanısal yaklaşım, ayırıcı tanı ve cerrahi hususlar tartışılmakta, sonuçları optimize etmek ve komplikasyonları en aza indirmek için doğru görüntüleme ve titiz cerrahi planlamanın önemi vurgulanmaktadır.

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Lipomas are the most prevalent benign mesenchymal neoplasms in the human body.[1] With a reported incidence of 1-4%, oral lipomas are slow-growing painless tumors of the oral cavity with well-defined borders typically affecting the buccal mucosa, lips, tongue, palate, and floor of the mouth. The majority of patients with lipomas are aged 40-60 years, although they can occur in older individuals as well.[2]

There is a lack of clarity regarding the etiology of oral lipomas, with several studies indicating the role of multiple factors like mechanical effects, inflammation, endocrine system, obesity, radiation, trauma, mucosal infections, chromosomal abnormalities, and chronic irritation.[3,4]

Symptomatic oral lipomas are usually excised surgically; although recurrence is rare some studies

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have reported recurrence rates below 5%.[3,5-7] This case report presents the management of a rare large intramucosal lipoma involving the mental nerve and discusses its diagnostic and surgical evaluations.

CASE REPORT

A 66-year-old male patient was referred to the Department of Oral and Maxillofacial Surgery at Ege University complaint of swelling in the lower jaw affecting his speech and chewing ability. The patient first noticed the swelling 5 years ago, and recently began experiencing a burning sensation. He was a nonsmoker and did not have any other systemic diseases, apart from Type 2 diabetes mellitus. Extraoral facial asymmetry was observed, while intraoral examination revealed a painful swelling in the vestibular region of the left mandibular premolar (Figure 1).

Following clinical examination and aspiration, magnetic resonance imaging (MRI) was requested for detailed imaging and exploring the relationship with adjacent structures (Figure 2). After endocrinology consultation and informed consent, surgical excision under local anesthesia was planned. A No. 15 scalpel was used to create a sharp dissecting incision at the mucogingival junction in the vestibular region between teeth 32 and 37, and the lesion was meticulously dissected with blunt dissecting scissors, paying particular attention to preserving the mental nerve (Figure 3A, Figure 3B). The three-lobed tumor was excised en bloc with its capsule. The mental nerve was intact post-excision, and primary closure was performed (Figure 3C, Figure 3D). Following the procedure, the patient was instructed regarding the postoperative care protocol and prescribed amoxicillin-clavulanate (1,000 mg), diclofenac potassium (50 mg), and chlorhexidine mouthwash.

The specimen was immediately immersed in formalin and transported to the pathology department for histopathological analysis. It was observed as an oval lobulated mass with a firm consistency (4×3.5×1.2 cm); microscopically, it contained proliferating mature adipocytes intersected by thin fibrous septa and covered by a delicate fibrous capsule, suggestive of a benign lipoma (Figure 4).

At one-week follow-up, sutures were removed, and good healing was noted at the 14th-day follow-up visit. However, he reported a slight loss of sensation in the lip area on the affected side. Superficial sensory testing showed positive responses to temperature and pain-prick tests but negative to touch. The relevant area was marked and recorded (Figure 5A). The patient was advised to take vitamin supplements (B_1, B_6, and B_{12}). A notable reduction in sensory loss was observed at the 2-month follow-up, which completely recovered at the 4-month follow-up without any other complaints (Figure 5B, Figure 6).

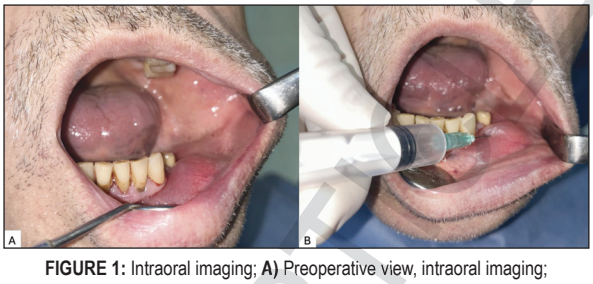

FIGURE 1: Intraoral imaging; **A)** Preoperative view, intraoral imaging; **B)** Preoperative clinical examination, negative aspiration

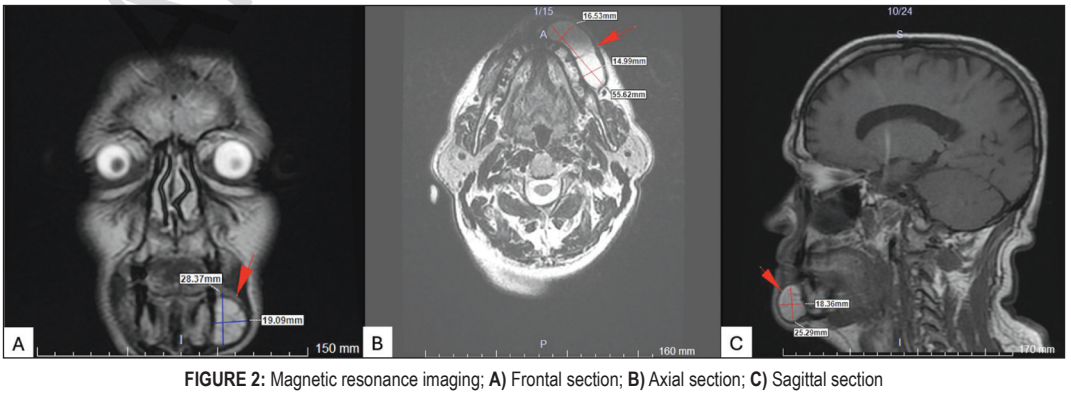

FIGURE 2: Magnetic resonance imaging; **A)** Frontal section; **B)** Axial section; **C)** Sagittal section

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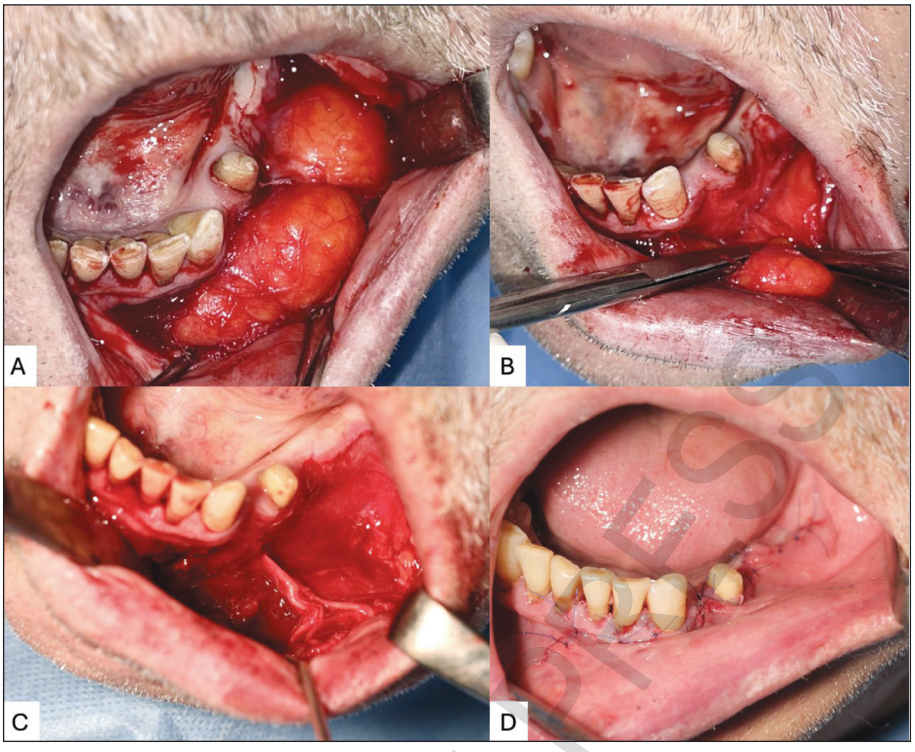

FIGURE 3: Intraoperative imaging; **A)** A sharp dissection of the vestibular mucosa was done to expose the massive multilobular oral lipoma; **B)** Prior to the excision of the overgrown oral lipoma, blunt dissection was performed; **C)** Anatomical course of the intact mental nerve within the soft tissue after excision of the oral lipoma; **D)** Primary closure of the wound site after excision

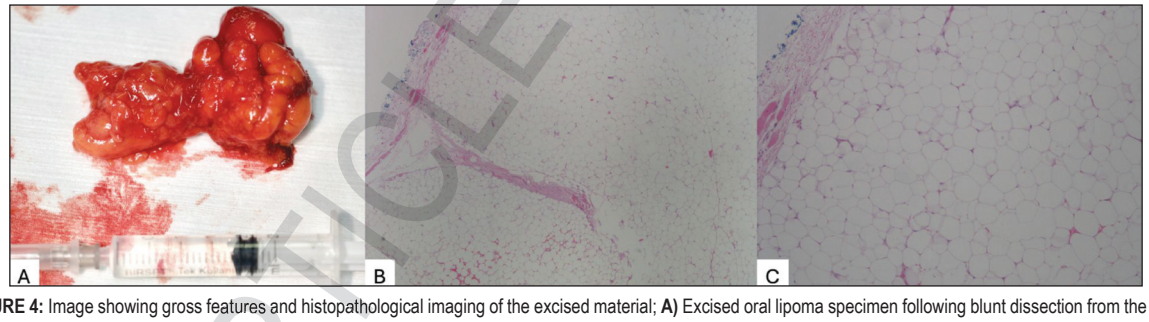

FIGURE 4: Image showing gross features and histopathological imaging of the excised material; **A)** Excised oral lipoma specimen following blunt dissection from the mental nerve; **B)** Histopathological imaging (x40 magnification); **C)** x100 magnification

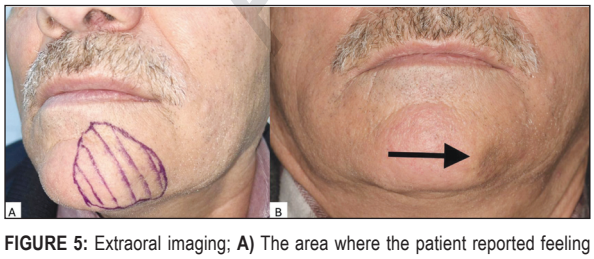

FIGURE 5: Extraoral imaging; **A)** The area where the patient reported feeling numbness 2 weeks after the surgery; **B)** Extraoral view in the 2nd postoperative month-the shaded area indicated by the arrow shows a significant reduction in the numb region

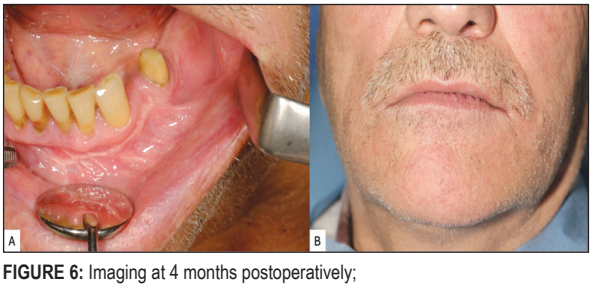

FIGURE 6: Imaging at 4 months postoperatively;
A) Intraoral imaging showing uneventful healing with complete resolution of the numbness; **B)** Extraoral imaging

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DISCUSSION

Oral lipoma was first described by Roux in 1848 as "yellow epulis". These lesions typically present as asymptomatic, soft, painless, yellowish, and movable masses; superficial blood vessels may be noticeable on the tumor's surface, with an intact overlying epithelium.[7,8] Although most commonly located in the buccal mucosa, they can also occur in the tongue or the floor of the mouth.[9] Oral lipomas generally have a diameter of 0.2-2 cm, although previous reports have documented oral lipomas larger than 2.5 cm.[9,10] In this study, a rare case of multilobular lipoma (1.6×5.6 cm) in the left mental foramen region was presented.

The presentation of oral lipomas can vary in terms of age and sex. Some studies report a higher prevalence in females while others find no sex-based difference.[2,9,11,12]

Although the exact cause of oral lipoma is unclear, different theories have been reported.[8] Furthermore, multiple lipomas have been noted in association with diseases such as Gardner syndrome, neurofibromatosis, Pai syndrome, Dercum's disease, and multiple familial lipomatosis.[5]

Diagnosis relies on clinical and histopathological evaluation, supported by MRI, computed tomography (CT), or ultrasound.[5,13] MRI offers more comprehensive information to define the tumor boundaries within the tissue and identify glandular components within the lipoma, while a CT scan may aid in diagnosis by evaluating the Hounsfield units of masses suspected to be lipomas.[6] Recent studies have shown that diagnosis through fine needle aspiration biopsy is also possible.[8]

Given their histological similarity to other benign mesenchymal neoplasms, differential diagnoses include oral lymphoepithelial cysts, salivary gland tumors, leiomyomas, and other soft tissue tumors.[7,14] Oral lymphoepithelial cysts, although similar in presentation, are typically smaller and located in the floor of the mouth, soft palate, or pharyngeal tonsils.[6,10]

Histologically, oral lipomas include mature adipocytes surrounded by fibrous connective tissue.[11,14] These cells exhibit increased metabolic activity and size variation compared to normal adipocytes.[1] Based on histological variations, previous studies have identified different types of soft tissue lipomas, the most common varieties being classic lipoma and fibrolipoma.[9,11] Osteolipoma, chondrolipoma, myxoid lipomas, intramuscular or infiltrative lipomas, salivary gland lipomas, angiolipoma, spindle cell lipomas, pleomorphic lipomas, and atypical lipomas, are other rarer variants, each presenting distinct morphological characteristics.[2,4] High lipoprotein lipase activity in neoplastic lipoma cells has been suggested as a contributor to tumor growth, making differentiation from normal adipose tissue challenging. Therefore, histopathological examination is crucial to exclude malignant transformation.[6,11]

Treatment involves conservative excision with preservation of the mental nerve, lingual nerve, salivary ducts and vascular structures. Some authors recommend neuromonitoring to prevent potential nerve damage.[11,13] In this case, the tumor surrounded the branches of the mental nerve, requiring careful dissection. On the other hand, alternative treatments such as steroid injections, laser therapy, cryotherapy and liposuction may be considered depending on size, location and surgical expertise.[8,15]

In conclusion oral lipomas are rare benign tumors. We present a rare case of a large oral lipoma in the buccal mucosa (1.6×5.6 cm) and discuss its successful surgical management. Our case report highlights that oral lipomas which are encountered in the buccal mucosa may involve the branches of the mental nerve, leading to sensory symptoms. Accurate imaging and careful surgical excision ensure optimal functional and aesthetic outcomes, enhancing patient comfort.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Muharrem Ergün Dudak;* ***Design:*** *Muharrem Ergün Dudak, İrem Yaman;* ***Control/Supervision:*** *Muharrem Ergün Dudak, İrem Yaman;* ***Data Collection and/or Processing:*** *Muharrem Ergün Dudak, İrem Yaman, Ali Eyüpoğlu, Murat Urgun;* ***Analysis and/or Interpretation:*** *Muharrem Ergün Dudak, İrem Yaman;* ***Literature Review:*** *Muharrem Ergün Dudak, Ali Eyüpoğlu, Murat Urgun;* ***Writing the Article:*** *Muharrem Ergün Dudak, İrem Yaman, Ali Eyüpoğlu, Murat Urgun;* ***Critical Review:*** *Muharrem Ergün Dudak, İrem Yaman;* ***References and Fundings:*** *Muharrem Ergün Dudak, İrem Yaman;* ***Materials:*** *Ali Eyüpoğlu, Murat Urgun.*

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