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Intraoral Lipoma: About a Case Report

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Abstract

Intraoral lipoma is a relatively uncommon benign neoplasm that arises from the adipose tissue within the oral mucosa. Although this condition primarily affects middle-aged individuals, its manifestation in the oral cavity is relatively uncommon. Clinically, intraoral lipomas present with variable appearances, and as they enlarge, they may lead to both functional and aesthetic concerns. Diagnosis is primarily based on histopathological examination, which confirms their benign nature. These tumors are noninvasive and exhibit a low recurrence rate following treatment. Consequently, conservative surgical excision is considered the treatment of choice. This case report describes a 60-year-old patient in apparent good general health who presented with a painless, sessile, smooth-surfaced nodular mass measuring 2.1 cm. The lesion was yellowish, fluctuant, and located at the right mandibular vestibule, adjacent to the premolar-molar region, extending into the vestibule. It had been evolving for two years and was interfering with the patient's complete denture insertion. For the treatment, a complete surgical excision of the lesion was performed. Histopathological analysis confirmed the diagnosis of an intraoral lipocytic lipoma with no signs of malignancy. This report aims to provide a comprehensive case presentation and an updated review of the literature on this rare pathology.

Subject Areas

Dentistry

Keywords

Benign Tumor, Oral Lipoma, Soft Tissue

1. Introduction

Oral lipomas are rare benign neoplasms of adipose tissue, accounting for approx-

imately 1% to 4.4% of all benign oral lesions [1]-[3]. Their overall prevalence in the general population is estimated to be 0.1% to 5%, with intraoral occurrences being significantly less frequent than their cutaneous counterparts [4] [5]. These tumors predominantly affect middle-aged and older adults, with an increased incidence after the age of 40, and no significant gender predilection has been reported [3] [4]. Intraoral lipomas typically develop in areas with abundant fat accumulation, including the lips, tongue, floor of the mouth, vestibule, and cheeks [2]-[5]. Less commonly, they have been documented in the salivary glands, gingivobuccal fold, parotid gland, masseter region, neck, and even in deeper structures such as the pharynx and larynx [6] [7]. Clinically, they present as soft, smooth-surfaced nodular masses that may be sessile or pedunculated. They are often yellowish, sometimes fluctuating, and visible through the mucosa. These lesions usually remain asymptomatic until they reach a significant size, at which point they can cause functional disturbances, aesthetic concerns, or difficulties in prosthetic rehabilitation. The pathogenesis of intraoral lipomas remains incompletely understood, but metabolic influences and genetic predispositions have been suggested as potential contributing factors. Metabolic dysregulation, including alterations in lipid metabolism and obesity-related mechanisms, has been implicated in their development. Additionally, chromosomal aberrations, particularly involving regions such as 12q13-15, have been identified in some cases, suggesting a genetic predisposition [3]-[5]. Unlike cutaneous lipomas, intraoral lipomas arise in a confined anatomical space, which can influence their growth pattern and clinical presentation. Furthermore, their differential diagnosis includes various soft tissue tumors, such as liposarcomas, fibromas, and salivary gland neoplasms, necessitating careful clinical and histopathological assessment.

Histologically, oral lipomas consist of mature adipocytes encapsulated by a well-defined fibrous connective tissue layer. They exhibit slow growth, and surgical excision remains the treatment of choice, given their noninvasive nature and low recurrence rate. Despite their benign nature, they can pose diagnostic challenges due to their resemblance to other soft tissue tumors, such as liposarcomas or salivary gland pathologies.

This case report presents an unusual occurrence of an intraoral lipoma in the mandibular parasymphysis vestibular region, interfering with prosthetic function. The report highlights the diagnostic approach, surgical management, and histopathological findings, contributing to the existing literature by emphasizing the broader clinical implications of such lesions beyond prosthetic concerns, including their potential impact on oral function, speech, and patient quality of life.

2. Case Presentation

A 60-year-old male patient, A.B., in good general health but with a history of chronic smoking and a high-fat diet, was referred to the Oral Surgery Department at the Dental Consultation and Treatment Center of Casablanca by his dentist. His chief complaint was the progressive enlargement of an intraoral painless mass

over the past two years, causing discomfort and interfering with the fitting of his full mandibular denture. The patient reported no history of trauma, systemic conditions, or prior similar lesions. Extraoral examination was unremarkable, with no evidence of facial asymmetry, lymphadenopathy, or associated systemic symptoms. Intraoral examination revealed a yellowish, well-circumscribed, smooth-surfaced nodular mass, measuring 2.1 × 1.8 cm, located at the right mandibular vestibule, adjacent to the premolar-molar region. The lesion was sessile, with a broad implantation base. On palpation, it was soft, compressible, and non-tender, without signs of fluctuation or vascularization. Additionally, clinical examination revealed non-detachable, non-elevated whitish plaques on the right buccal mucosa, raising suspicion of smoking-induced leukoplakia (**Figure 1**).

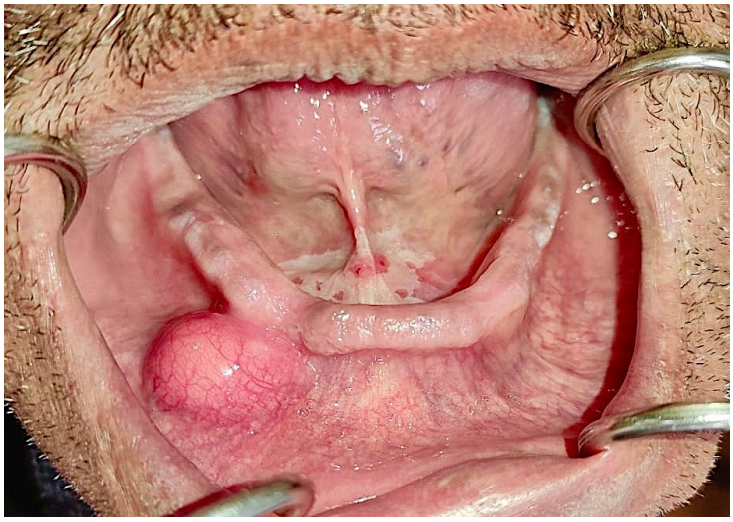

Figure 1. Endo-buccal photograph showing the intraoral lipomatous lesion before excision.

For the radiographic assessment, a panoramic radiograph was performed to assess potential osseous involvement or deeper soft tissue extension. The imaging did not reveal any abnormalities, ruling out bone resorption, calcifications, or deep soft tissue invasion (**Figure 2**).

Based on the clinical and radiographic findings, the differential diagnoses included lipoma, which was the most likely due to its soft and well-circumscribed nature, mucous retention cyst, excluded given the absence of fluid content or fluctuation, traumatic fibroma, considered less likely due to the lesion's soft consistency, and minor salivary gland tumor, ruled out based on the absence of glandular differentiation on histology.

An excisional biopsy was performed under local anesthesia using a 3 cm mucosal scalpel incision, revealing a well-encapsulated lesion that was completely excised (**Figures 3(a)-(c)**). The excised mass measured 2.1 cm and exhibited a homogeneous yellowish appearance, consistent with a fatty tumor (**Figure 3(d)**). Closure was achieved using 4-0 resorbable sutures (**Figure 3(e)**), allowing for rapid healing and minimizing postoperative discomfort. The decision to perform

scalpel excision over laser excision was based on multiple factors, including the well-defined encapsulation of the lesion, the need for a clear histopathological assessment without potential thermal artifacts, and the cost-effectiveness of conventional surgical removal. No excessive bleeding or intraoperative complications were observed.

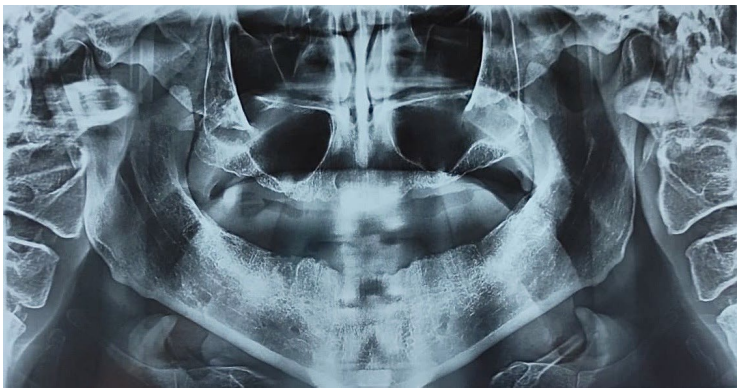

Figure 2. Panoramic radiograph showing no significant findings.

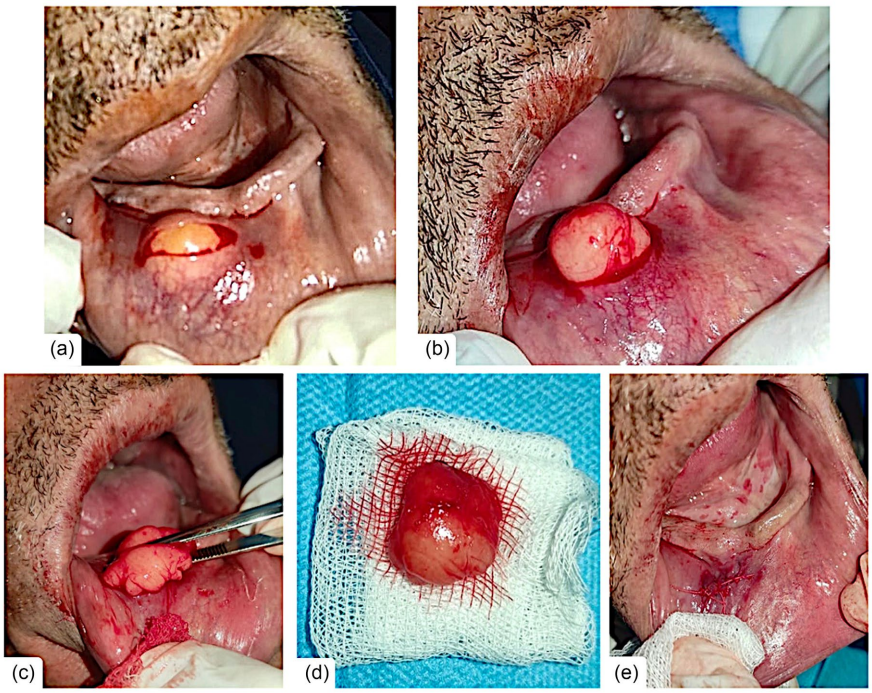

Figure 3. Complete excision of the intraoral lipoma. (a) Superficial scalpel incision revealing the yellowish mass. (b, c) Surgical excision procedure. (d) Measurement of the lesion (2.1 cm). (e) Postoperative sutures.

Postoperatively, the patient was prescribed first-line analgesics and antiseptic mouth rinses for one week. A soft diet was recommended for the first 48 hours. At the 1-month follow-up, complete healing was observed with no signs of recurrence. At 6 months, the patient remained asymptomatic, confirming the effectiveness of complete excision and the benign nature of the lesion.

Histopathological examination confirmed the presence of mature adipocytes arranged in lobules, separated by thick fibrous connective tissue septa (Figure 4, Figure 5). The adipocytes displayed uniform size and shape, with no signs of pleomorphism, mitotic activity, or cellular atypia, confirming the diagnosis of a benign intraoral lipocytic lipoma with no signs of malignancy.

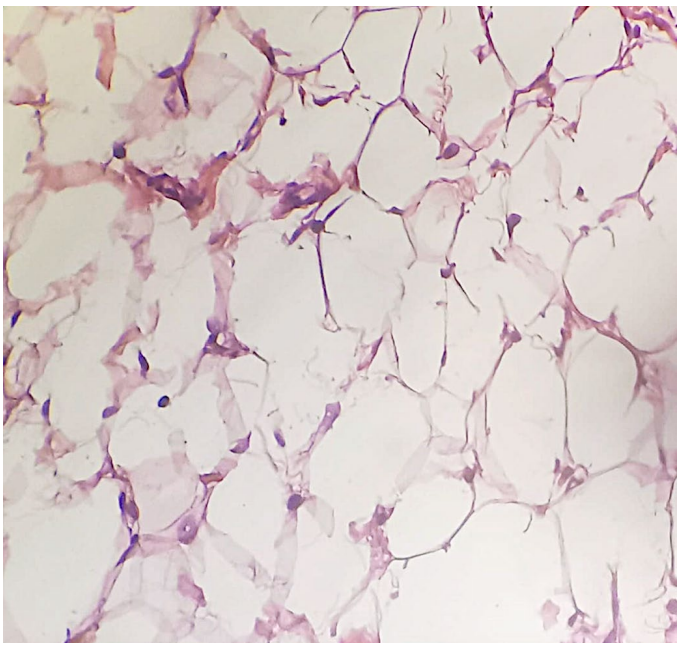

Figure 4. High-magnification histological view (×400) showing mature adipocytes in lobules.

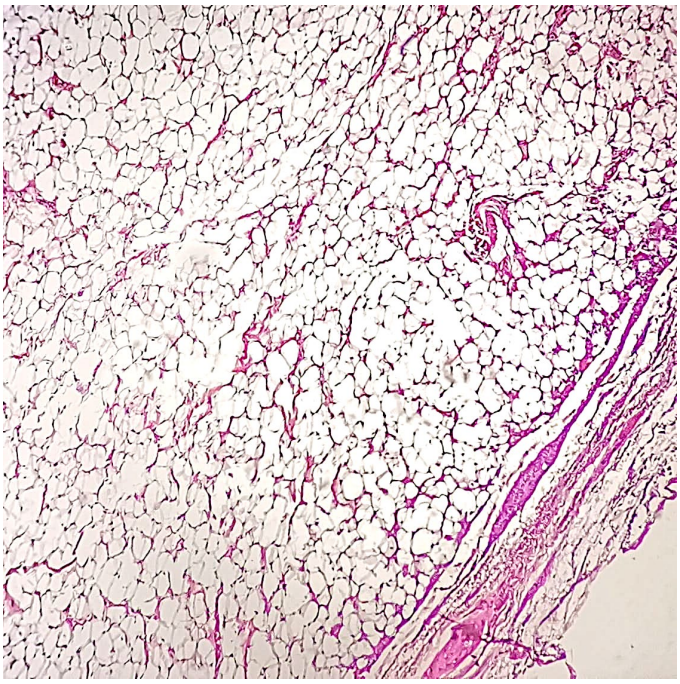

Figure 5. Low-magnification view (×100) highlighting fibrous septa between adipocyte clusters.

The postoperative course was uneventful, with proper wound healing and no recurrence observed during the 6-month follow-up. Given the presence of leukoplakia, the patient was strongly advised to quit smoking, and regular follow-up visits were scheduled to monitor any mucosal changes. Additionally, lifestyle modifications, including dietary adjustments and oral hygiene reinforcement, were recommended to minimize any risk of recurrence or associated complications.

3. Discussion

Lipomas can develop in various parts of the body, including the head and neck region, where they account for approximately 15% - 20% of all lipomas [8]. However, intraoral lipomas remain rare, representing only 1% - 4% of cases in this area [2]. The most frequently affected sites in the oral cavity include the buccal mucosa, lips, palate, salivary glands, tongue, and floor of the mouth [5]. In our case, the lipoma was located in the buccal mucosa of the right mandibular vestibule. Intraoral lipomas can occur at any age, although they are more commonly diagnosed in individuals over 40 years old [4]. While some studies have reported no significant gender predilection, others suggest a higher prevalence in one sex over the other [9]. The exact etiology and pathogenesis remain unclear. However, they appear to be more frequent in obese individuals, suggesting a possible metabolic influence. Additionally, various factors such as trauma, chronic irritation, fatty degeneration, infection, hormonal imbalances, and genetic predispositions have been proposed as potential contributors to their development [10]. Some studies have also suggested a possible association between oral lipomas and human papillomavirus type 16 (HPV-16) as well as diabetes [11], although further research is needed to establish a definitive link.

In this case, the coexistence of leukoplakia raises the possibility that chronic irritation from smoking may have played a role in the pathogenesis of both lesions. While leukoplakia is widely recognized as a potentially malignant disorder linked to tobacco use, chronic irritation has also been hypothesized as a contributing factor in the development of lipomas [10]. Prolonged mechanical irritation, such as that caused by an ill-fitting denture, might have acted as a promoting factor in lipoma formation. This interplay between chronic irritation and benign neoplastic processes warrants further investigation to clarify its role in oral soft tissue tumorigenesis.

Multiple lipomas, which account for approximately 5% of reported cases, have been described in association with syndromes such as neurofibromatosis, Gardner's syndrome, Dercum's familial lipomatosis, Proteus syndrome, and Pai syndrome [12]. The clinical presentation of intraoral lipomas varies depending on their location. Typically, they manifest as painless, slow-growing, sessile masses with a yellowish hue that may be visible through the thin mucosa. Their size generally ranges from 0.2 to 2 cm in diameter, although larger lesions, reaching up to 5 cm, have been documented [13]. As these tumors enlarge, they can lead to func-

tional impairments, including dysphagia, speech difficulties, and chewing alterations, which may result in nutritional deficiencies, particularly in frail geriatric patients. Compared to other reports, our case aligns with the literature in terms of size and asymptomatic nature and the treatment offered [3] [17] [18]. Pain, necrosis, and infiltration rarely occur, and their presence usually suggests a malignant origin, warranting biopsy before any treatment modality.

For the diagnosis of intraoral lipomas, Magnetic Resonance Imaging (MRI) scans are particularly useful, especially for infiltrating forms. MRI offers superior soft tissue contrast, aiding in the precise characterization of the lesion's composition and its relationship to adjacent structures, whereas computed tomography scans are less reliable. Nevertheless, histopathological examination remains essential and is regarded as the definitive method for diagnosing intraoral lipomas. Histologically, lipomas consist of mature adipocytes arranged in lobules separated by fibrous connective tissue septa. These lesions can be further categorized into different subtypes, including conventional lipoma, fibrolipoma, spindle cell lipoma, intramuscular or infiltrating lipoma, angiolipoma, pleomorphic lipoma, myxoid lipoma, and atypical lipoma [14].

In our case, the initial differential diagnosis included traumatic fibroma, particularly due to the patient's use of an ill-fitting denture, which could have led to fibroma formation. Other differential diagnoses included pleomorphic adenoma in a minor salivary gland, schwannoma [15], and, less commonly, liposarcoma as reported in other cases [16]. Accurate differential diagnosis is crucial in avoiding mismanagement and ensuring appropriate treatment.

Regarding treatment, complete surgical excision remains the primary modality for oral lipomas, whether performed using a scalpel or laser [17] [18]. The choice between these techniques depends on various factors, including lesion characteristics, patient preference, and cost considerations. Laser excision offers advantages such as reduced intraoperative bleeding and faster postoperative healing; however, it may introduce thermal artifacts that could compromise histopathological evaluation. In our case, scalpel excision was preferred due to the well-defined encapsulation of the lesion, ensuring complete removal while preserving histological integrity. Additionally, this technique is cost-effective and widely available, making it the optimal approach in many clinical settings.

Liposuction has also been explored as a minimally invasive alternative for both small and large lipomas, particularly when aesthetic concerns are paramount. Furthermore, medical treatments, such as corticosteroid injections, have been proposed as an alternative to surgical excision in select cases. A 1:1 mixture of lidocaine and triamcinolone acetonide has been used for monthly injections at the center of the lesion [19], particularly for lipomas under 2.5 cm in diameter. However, the long-term efficacy of this approach remains under investigation.

This case reinforces the benign nature of intraoral lipomas and underscores the importance of an accurate differential diagnosis to distinguish them from other soft tissue tumors. Complete surgical excision remains the treatment of choice,

providing excellent outcomes with minimal risk of recurrence. In our case, no signs of recurrence were observed after total excision, which aligns with the literature, where encapsulated lipomas rarely recur [4]. However, infiltrating lipomas, lacking a capsule, have a higher recurrence risk if not fully removed. Notably, even in cases of recurrence, no malignant transformation has been reported [15].

Finally, this case highlights the clinical relevance of thorough oral examinations in identifying and managing soft tissue lesions. Many benign tumors, such as lipomas, can remain undiagnosed for years due to their slow growth and asymptomatic nature. This emphasizes the need for regular dental check-ups, especially in high-risk patients, such as chronic smokers. Moreover, patient education plays a pivotal role in oral health maintenance. In our case, the presence of leukoplakia necessitated smoking cessation counseling to reduce the risk of malignant transformation. Encouraging lifestyle modifications, including dietary adjustments and improved oral hygiene, is essential in preventing recurrence and associated complications.

4. Conclusion

Although intraoral lipomas are rare, they should be considered in the differential diagnosis of soft tissue masses in the oral cavity, particularly when they present as painless, slow-growing nodules. This case highlights the importance of histopathological confirmation in ruling out other soft tissue neoplasms. Conservative surgical excision remains the treatment of choice, offering an excellent prognosis with minimal risk of recurrence. Further research is needed to better understand the pathogenesis and optimal management strategies for these lesions.

Conflicts of Interest

The authors declare no conflicts of interest.

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