



SURGICAL MANAGEMENT OF A MUCOCELE OF THE LOWER LIP: CASE REPORT

ABORDAGEM CIRÚRGICA DE MUCOCELE EM LÁBIO INFERIOR: RELATO DE CASO

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Vinícius Franzão Ganzaroli¹

Rodrigo Isaías Lopes Pereira²

Beatriz Pontim Pistolato³

Wellington Elioenae do Nascimento⁴

Arthur Nascimento Rocha⁵

Hingryd Coelho Braga⁶

Maria Eduarda Sansão Nascimento⁷

Roberta Mirandola Mile Rossi⁸

Renata Freitas Varanda de Siqueira⁹

Samuel Lucas Fernandes¹⁰

Luciana Estevam Simonato¹¹

1 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil. Department of Diagnosis and Surgery, São Paulo State University (UNESP), School of Dentistry, Araçatuba, São Paulo, Brazil.

2 Department of Basic Science, São Paulo State University (UNESP), School of Dentistry, Araçatuba, São Paulo, Brazil.

3 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

4 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

5 Department of Basic Science, São Paulo State University (UNESP), School of Dentistry, Araçatuba, São Paulo, Brazil.

6 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

7 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

8 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

9 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

10 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

11 Faculty of Dentistry, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil. Environmental Sciences Graduate Program, Institute of Science and Technology, Universidade Brasil (UB), Fernandópolis, São Paulo, Brazil.

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ABSTRACT

The mucocele is a benign pseudocystic lesion of the minor salivary glands, generally associated with mucus leakage resulting from local trauma; the lower lip is the most commonly affected site. The aim of this study is to report a clinical case of a mucocele of the lower lip treated by surgical excision, emphasizing its clinical and histopathological features. A 21-year-old male patient presented with an asymptomatic mass on the mucosa of his right lower lip that had been present for approximately five months. During the medical history, he reported a previous episode of accidental biting in the region, suggesting a possible etiological factor for the development of the lesion. On clinical examination, a single, sessile, well-defined nodular lesion with a fluctuant consistency was observed, consistent with the diagnostic hypothesis of a mucocele. Due to the persistence of the lesion, surgical excision was performed, along with removal of the adjacent minor salivary glands. The excised tissue was sent for histopathological analysis, which confirmed the diagnosis of a mucocele caused by mucus extravasation. The postoperative course was uneventful, with satisfactory recovery and no signs of recurrence. It is concluded that surgical excision combined with the removal of the involved minor salivary glands constitutes a safe and effective approach for the treatment of mucocele of the lower lip, providing adequate tissue repair and reducing the risk of recurrence.

Keywords: Mucocele; Oral Surgery; Oral Pathology; Minor Salivary Glands.

RESUMO

A mucocelo é uma lesão pseudocística benigna das glândulas salivares menores, geralmente associada ao extravasamento de muco decorrente de trauma local, sendo o lábio inferior o sítio mais frequentemente acometido. O presente trabalho tem como objetivo relatar um caso clínico de mucocelo em lábio inferior tratada por excisão cirúrgica, enfatizando seus aspectos clínicos e histopatológicos. Paciente do sexo masculino, 21 anos de idade, apresentou aumento de volume assintomático na mucosa do lábio inferior direito, com aproximadamente cinco meses de evolução. Durante a anamnese, relatou episódio prévio de mordedura acidental na região, sugerindo possível fator etiológico para o desenvolvimento da lesão. Ao exame clínico, observou-se lesão nodular única, séssil, bem delimitada e de consistência flutuante, compatível com hipótese diagnóstica de mucocelo. Em razão da persistência da lesão, foi realizada exérese cirúrgica associada à remoção das glândulas salivares menores adjacentes. O material obtido foi encaminhado para análise histopatológica, onde foi confirmado o diagnóstico de mucocelo por extravasamento de muco. O pós-operatório transcorreu sem intercorrências, apresentando evolução satisfatória e ausência de sinais de recidiva. Conclui-se que a excisão cirúrgica associada à remoção das glândulas salivares menores envolvidas constitui uma abordagem segura e eficaz para o tratamento da mucocelo em lábio inferior, proporcionando adequado reparo tecidual e reduzindo o risco de recorrência.

Palavras-chave: Mucocelo; Cirurgia Bucal; Patologia Bucal; Glândulas Salivares Menores.





INTRODUCTION

Oral mucocèles are benign pseudocystic lesions commonly found in the oral cavity, characterized by the leakage or retention of mucus into adjacent tissues due to obstruction of the excretory ducts of the minor salivary glands; their etiology is often linked to trauma (NEVILLE et al., 2016). Clinically, an oral mucocèle presents as a nodular, sessile mass, either single or multiple, that is well-defined and painless, with a translucent color ranging from pink to bluish (BEZERRA et al., 2016).

Epidemiological studies suggest that mucocèles occur in all age groups, though they are most common in adults in their twenties, with no gender-specific differences in their occurrence (PATINI et al., 2023). This type of lesion is most commonly found on the lower lip, as this region is the most frequently affected by local soft-tissue trauma in the oral cavity, usually associated with biting, parafunctional habits, or external factors (KANNAN et al., 2024).

Although they are asymptomatic, mucocèles can interfere with basic functions such as eating, speaking, and swallowing when they are large or located in specific regions (HUZAIFA et al., 2023). The differential diagnosis includes lesions such as hemangiomas, lipomas, epidermoid cysts, and salivary gland tumors; a thorough medical history and clinical examination are essential for evaluating the lesion (SWAIN et al., 2024). However, definitive diagnosis often requires an excisional biopsy and histopathological examination, especially in recurrent or atypical lesions. Histologically, a cystic wall devoid of epithelium is observed, bounded by granulation tissue, which distinguishes these lesions from conventional cysts, along with numerous foamy macrophages resulting from local inflammation (MORITA et al., 2023).

From a therapeutic standpoint, complete surgical excision with removal of the affected salivary gland remains the treatment of choice for persistent lesions or those suitable for this technique, which has a low recurrence rate when performed properly (MUKUNDAN et al., 2024). Minimally invasive and alternative approaches, such as CO₂ laser therapy, cryosurgery,





intralesional corticosteroid injections, and marsupialization methods, have been reported to have variable efficacy and lower operative morbidity, although robust comparative evidence remains limited (HASHEMI et al., 2023).

Despite its common occurrence, significant gaps still persist in the literature regarding the actual prevalence in different populations, diagnostic standardization, and comparisons of efficacy among emerging therapeutic techniques for treating this type of lesion (NARENDRAN et al., 2025). Thus, the present study aims to report a clinical case of a mucocele of the lower lip that was treated by surgical excision of the lesion, as well as to provide relevant data on its clinical and histopathological diagnosis.

METHODS

This study is a qualitative and descriptive clinical case report designed to present the clinical, surgical, and histopathological aspects of a mucocele of the lower lip, as well as to discuss its characteristics in light of the scientific literature. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki, ensuring the confidentiality, anonymity, and privacy of the information. The patient was fully informed about the diagnostic and therapeutic procedures and signed the Informed Consent Form (ICF) provided by the Dental Clinic of Universidade Brasil, authorizing the treatment and the use of his data and images for scientific purposes and publication in specialized journals.

CASE REPORT

A 21-year-old male patient with leukoderma and no history of relevant systemic diseases presented to the Dental Clinic of Universidade Brasil reporting a swelling of the mucosa of the right lower lip that had been present for approximately five months. The patient did not report pain, episodes of spontaneous rupture, or periods of regression of the lesion. During the medical history interview, he reported a previous episode of accidentally biting his





lower lip in the region corresponding to the site of the lesion, suggesting a possible traumatic etiology for the clinical presentation.

On intraoral clinical examination, a single, well-defined nodular lesion, approximately 1 cm in diameter, was observed on the mucosa of the right lower lip. The lesion had a color similar to that of the adjacent mucosa, a smooth surface, a sessile base, and a fluctuant consistency on palpation, with no clinical signs of an associated inflammatory process. Based on the clinical characteristics and the location of the lesion, a mucocele was established as the diagnostic hypothesis.

Given the persistence of the lesion and the absence of spontaneous regression, surgical excision was chosen as the diagnostic and therapeutic approach. Initially, intraoral antisepsis was performed with 0.12% chlorhexidine digluconate, and extraoral antisepsis with povidone-iodine (PVPI). Next, perilesional infiltration anesthesia was administered using 2% mepivacaine combined with epinephrine 1:100,000.

After adequate anesthetic block, a straight incision was made using a No. 15 scalpel blade (Figure 1A, Figure 1B). Careful dissection of the adjacent tissues was performed using straight-bladed Iris scissors (Figure 1C, Figure 1D), allowing for complete removal of the lesion and minimizing trauma to the surrounding tissues (Figure 1E). At the same time, the minor salivary glands adjacent to the surgical field were removed to reduce the risk of recurrence (Figure 1F). The surgical specimen was immediately fixed in 10% buffered formalin solution and sent for histopathological analysis. At the end of the procedure, the surgical wound was closed with simple interrupted sutures using 4-0 silk suture, ensuring adequate tissue approximation (Figure 1H).



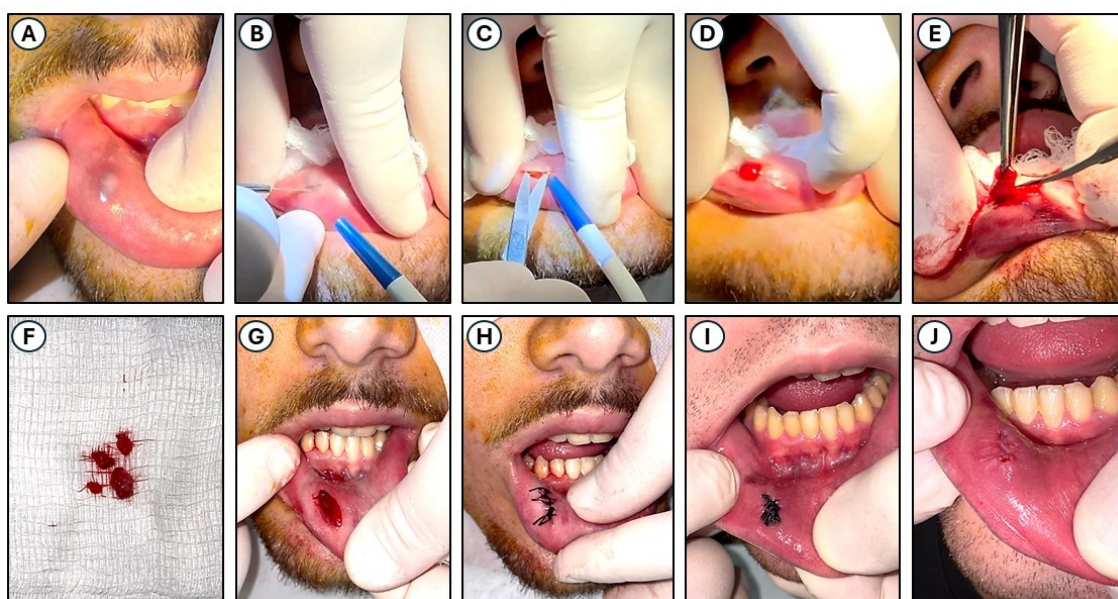


Figure 1: Surgical procedure and follow-up. **A:** Clinical appearance of the lesion; **B:** Straight incision; **C:** Tissue dissection; **D:** Excision of the lesion; **E:** Removal of the lesion; **F:** Lesion removed along with adjacent minor salivary glands; **G:** Appearance of the lower lip after removal of the lesion; **H:** Wound closure with simple interrupted sutures; **I:** Appearance of the lower lip seven days postoperatively with sutures in place; **J:** Appearance of the lower lip after suture removal.

Seven days later, during the postoperative follow-up visit, the sutures were removed, and adequate healing of the surgical wound was observed, with no complications (Figure 1I, Figure 1J).

Histopathological analysis revealed a pseudocystic cavity containing mucinous material, surrounded by fibrous connective tissue with an intense chronic inflammatory infiltrate and numerous foamy macrophages. An absence of epithelial lining was observed, a finding consistent with mucus extravasation. Adjacent minor salivary glands showed mild inflammatory changes. The microscopic findings confirmed the diagnosis of mucocele (Figure 2A, Figure 2B, Figure 2C). The patient remains under clinical follow-up and, to date, shows no signs of recurrence of the lesion.

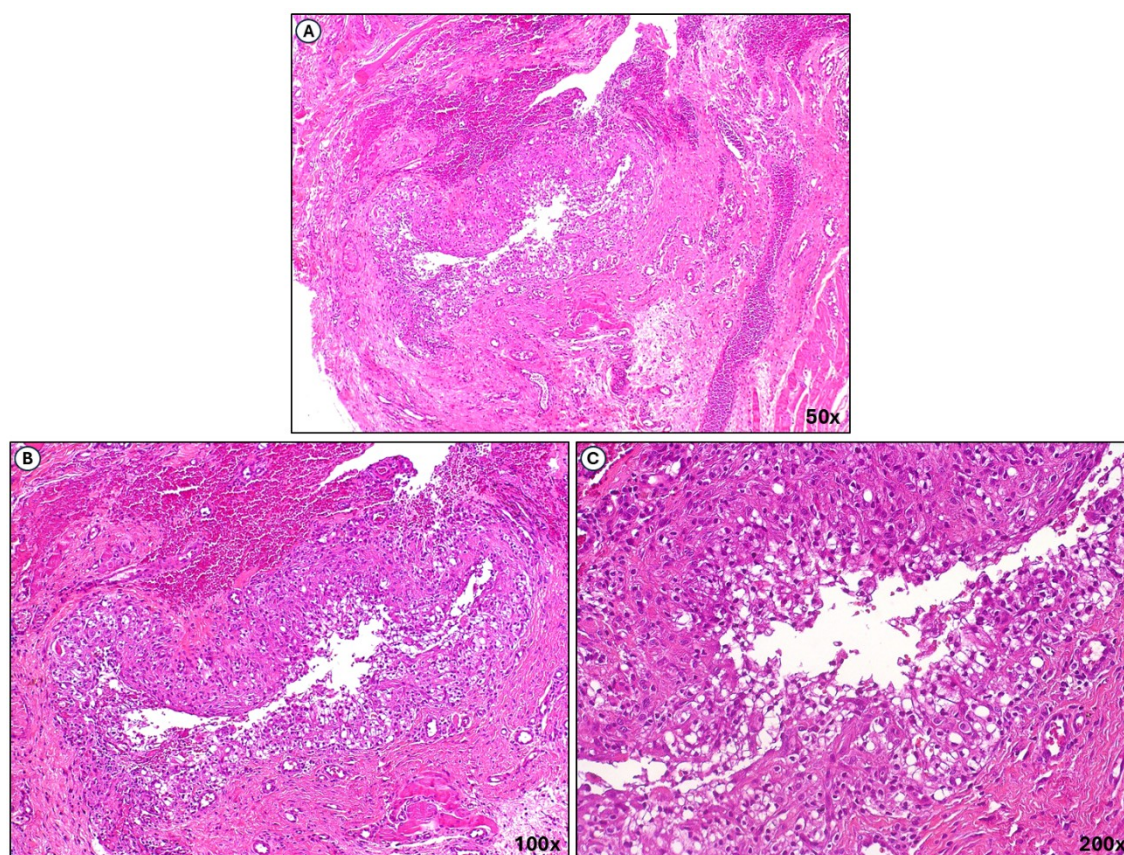


Figure 2: Histopathological analysis of a mucocèle on the lower lip. **A, B, and C:** Photomicrographs of different regions at 50x, 100x, and 200x magnification.

DISCUSSION

Mucocèle is one of the most common benign lesions of the oral mucosa, resulting, in most cases, from the extravasation of mucus into the underlying tissues due to mechanical trauma to the excretory duct of the minor salivary glands (BATISTA et al., 2024; MELO et al., 2025; PEIXOTO et al., 2008; NASCIMENTO et al., 2014). The predominance on the lower lip, as observed in the present case, is widely described in the literature and is associated with this region's greater susceptibility to repetitive microtrauma, especially related to parafunctional habits such as lip biting (BATISTA et al., 2024; MELO et al., 2025;



PEIXOTO et al., 2008). Mucocèles are more common in male children and adults, likely because this group exhibits more parafunctional habits in the oral cavity (NASCIMENTO et al., 2014).

From a clinical perspective, mucocèles typically present as nodular lesions with a fluctuant consistency, a smooth surface, and a color that can range from normochromic to bluish, depending on the depth, mucous content, and duration of the lesion. These characteristics were consistent with the findings observed in this case, corroborating previous descriptions that highlight the clinical diagnosis as suggestive, though not definitive (SANTANA et al., 2025; ERPEN et al., 2024). In this context, histopathological examination remains indispensable for diagnostic confirmation, allowing for the distinction between types of extravasation and retention, as well as ruling out other lesions of a similar nature, such as neoplasms of the minor salivary glands (OLIVEIRA et al., 2018). As noted, the histopathological examination confirmed features consistent with a mucocèle due to extravasation in the analyzed region, notably the presence of a pseudocystic cavity containing mucinous material, without an epithelial lining, surrounded by granulation tissue and chronic inflammatory infiltrate. Numerous foamy macrophages were also observed, resulting from the inflammatory response triggered by the leakage of mucus into the connective tissue (MINOMI et al., 2021).

Regarding treatment, various approaches have been proposed, including conservative techniques such as marsupialization, micromarsupialization, cryotherapy, laser therapy, sclerotherapy, and corticosteroid injection. However, conventional surgical excision remains the most widely used and effective method, especially for persistent or larger lesions (BATISTA et al., 2025; SANTANA et al., 2025; OLIVEIRA et al., 2018; MINOMI et al., 2021). In the present case, surgical excision was used as both a diagnostic and therapeutic approach, allowing for the complete removal of the lesion and the associated minor salivary glands, as well as the collection of material for histopathological examination and confirmation of the definitive diagnosis (MINOMI et al., 2021).





The removal of the minor salivary glands associated with the lesion is a key factor in therapeutic success and in preventing recurrence. The literature highlights that the persistence of these structures can maintain the source of mucous leakage, favoring the reappearance of the lesion after treatment (MELO et al., 2025; PEIXOTO et al., 2008; MINOMI et al., 2021). In this context, it is recommended that surgical excision be performed carefully and thoroughly, encompassing not only the removal of the mucocoele but also the adjacent glandular tissue involved in the pathological process. Furthermore, improper surgical manipulation can cause damage to neighboring minor salivary glands or their excretory ducts, resulting in renewed mucus leakage and promoting the development of secondary mucocoeles. Therefore, the surgical technique should prioritize delicate tissue dissection, minimizing unnecessary trauma and reducing the risk of recurrence or the formation of new lesions (MELO et al., 2025; PEIXOTO et al., 2008).

Despite the favorable prognosis associated with surgical excision, recurrence cannot be entirely ruled out. Studies report that recurrences are often related to incomplete excision, difficulty in identifying the involved glands, or the persistence of the etiological agent, such as repetitive trauma (SANTANA et al., 2025; ERPEN et al., 2024). In this regard, postoperative follow-up and patient counseling regarding the elimination of harmful habits are essential for monitoring healing, early detection, and prevention of possible recurrences.

Thus, the findings of the present case are consistent with the reviewed literature, reinforcing that surgical excision, when performed appropriately and combined with the removal of the involved minor salivary glands, constitutes a safe, effective approach with a low recurrence rate for the treatment of mucocoeles of the lower lip.

CONCLUSION

This case report demonstrated that a thorough clinical evaluation, combined with histopathological confirmation, is essential for the definitive diagnosis of the lesion. Complete surgical excision, accompanied by the removal of adjacent minor salivary glands, proved to





be a safe and effective approach, resulting in adequate healing, an absence of postoperative complications, and the prevention of recurrences during the follow-up period. Thus, these findings reinforce the importance of accurate diagnosis and proper surgical technique for therapeutic success in the treatment of mucocèles.

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