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Case Report

Oral Mucocele of the Lower Lip: A Case Series and Review of Management

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ABSTRACT

Background: Oral mucoceles are common benign lesions of the minor salivary glands, frequently involving the lower lip. They arise due to trauma-induced rupture or obstruction of salivary ducts, leading to mucus accumulation within the surrounding connective tissue. Although usually asymptomatic, mucoceles may cause aesthetic concern, functional interference, and recurrence.

Aim: To present a clinical case series of lower lip mucoceles managed surgically and to review their pathogenesis, diagnosis, and management.

Case Series: Two patients presenting with painless lower lip swellings were clinically diagnosed as mucoceles. Both cases were treated by complete surgical excision. Healing was uneventful, with no recurrence on follow-up.

Conclusion: Surgical excision of oral mucoceles along with the associated minor salivary gland tissue remains the most predictable treatment modality, offering excellent prognosis and minimal recurrence.

INTRODUCTION

Oral mucoceles are benign, cyst-like lesions arising from the minor salivary glands due to disruption in normal salivary flow. They most commonly affect the lower lip, followed by the buccal mucosa, ventral tongue, and floor of the mouth. Clinically, they present as soft, fluctuant, bluish or translucent swellings, often associated with a history of trauma such as lip biting [1].

Although mucoceles are non-neoplastic and frequently self-limiting, persistent or recurrent lesions require intervention to alleviate discomfort and prevent repeated rupture [2]. This article presents a case series of lower lip mucoceles treated surgically and reviews current management strategies.

PATHOGENESIS

Based on their etiopathogenesis, oral mucoceles are classified into two types:

Extravasation Mucocele

The most common form, caused by trauma-induced rupture of salivary ducts, resulting in mucus spillage into surrounding tissues. These lesions lack an epithelial lining and are surrounded by granulation tissue [3].

Retention Mucocele

A less frequent variant caused by obstruction of salivary ducts, leading to mucus retention and formation of an epithelium-lined cyst [4].

Clinical Features

Clinically, mucoceles appear as:

- Painless, soft, fluctuant swellings
- Bluish or translucent lesions
- Commonly located on the lower lip
- Variable in size, often showing fluctuation due to rupture and re-accumulation

A history of local trauma or habitual lip biting is frequently reported [5].

CASE SERIES

CASE 1

Chief Complaint:

A patient presented with a painless swelling on the lower lip of gradual onset.

Clinical Findings:

A soft, fluctuant, bluish swelling was noted on the lower labial mucosa. The lesion was non-tender and compressible.

Diagnosis:

Based on clinical presentation, a provisional diagnosis of lower lip mucocele was made.

Treatment:

Complete surgical excision of the lesion along with adjacent minor salivary glands was performed under local anaesthesia.

Outcome:

Postoperative healing was satisfactory, and no recurrence was observed during follow-up.

Figure 1: Case 1 - Pre- Treatment Clinical Photograph.

Figure 2: Case 1 - Post- Treatment Clinical Photograph.

Figure 3: Case 1 - During The Treatment Photograph.

Figure 4: Case 1 – Excised Mucocele.

Figure 5: Case 1 – Post op (POD 7).

NATURE OF SPECIMEN. : Right lower lip lesion.

CLINICAL HISTORY. : Mucocele.

EXAMINATION OF TISSUE. :

GROSS. : Single mucosa capped soft yellow nodular lesion measuring 1.2 x 1 cm in size. Nodule bisected and processed entirely.

MICROSCOPY. : Section reveals overlying mucosa with in normal limits. The submucosa shows a cyst lined by muciphages. The wall is collagenous. Minor salivary gland is seen in the vicinity.

No evidence of significant mitosis or lining atypia.

IMPRESSION. : Consistent with mucus retention cyst {mucocele}.

Figure 6: Case 1 - Histopathology Report.

CASE 2

Chief Complaint:

A patient reported a small, painless swelling on the lower lip for 10 days following habitual lip biting.

Clinical Findings:

A well-defined, soft, cystic lesion was observed on the lower labial mucosa.

Diagnosis:

Clinical diagnosis of traumatic extravasation mucocele was established.

Treatment:

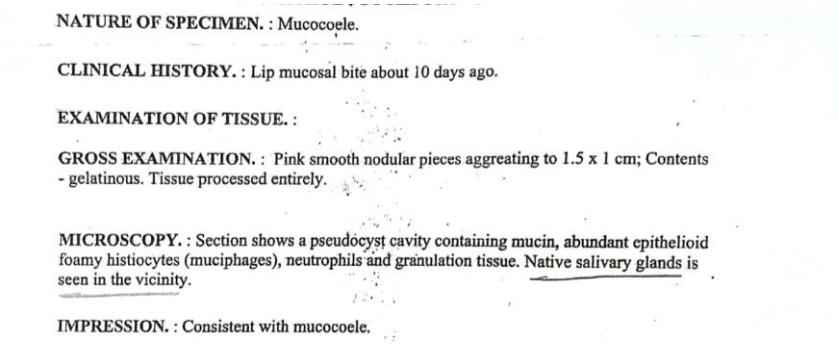
Surgical excision of the lesion including surrounding glandular tissue was carried out.

Outcome:

Healing was uneventful, with complete resolution of symptoms and no recurrence.

Figure 7: Case 2 - Pre- Treatment Clinical Photograph.

Figure 8: Case 2 - Post- Treatment Clinical Photograph.



NATURE OF SPECIMEN. : Mucocoele.

CLINICAL HISTORY. : Lip mucosal bite about 10 days ago.

EXAMINATION OF TISSUE. :

GROSS EXAMINATION. : Pink smooth nodular pieces aggreating to 1.5 x 1 cm; Contents - gelatinous. Tissue processed entirely.

MICROSCOPY. : Section shows a pseudocyst cavity containing mucin, abundant epithelioid foamy histiocytes (muciphages), neutrophils and granulation tissue. Native salivary glands is seen in the vicinity.

IMPRESSION. : Consistent with mucocoele.

Figure 9: Case 2 – Histopathology Report.

DIAGNOSIS

The diagnosis of oral mucocele is primarily clinical, based on characteristic appearance and history. Histopathological examination, when performed, confirms the diagnosis by demonstrating mucin-filled cavities surrounded by granulation tissue in extravasation mucoceles or epithelium-lined cysts in retention types [6]. Imaging modalities such as ultrasonography or MRI may be indicated in large or deep-seated lesions [7].

MANAGEMENT AND RECURRENCE

Various treatment modalities have been described, including observation, intralesional corticosteroids, marsupialization, laser therapy, cryotherapy, and surgical excision. Among these, **complete surgical excision with removal of adjacent minor salivary glands** shows the lowest recurrence rate and remains the treatment of choice for recurrent or symptomatic lesions [8,9]. Recurrence is usually attributed to incomplete removal of glandular tissue or persistent local trauma [10].

DISCUSSION

Oral mucoceles represent one of the most frequently encountered benign lesions arising from the minor salivary glands, with a strong predilection for the lower lip. This anatomical preference is well documented in literature and is attributed to the higher density of minor salivary glands in the lower labial mucosa, combined with increased susceptibility to mechanical trauma such as accidental lip biting, mastication-related injury, and parafunctional habits [1,2].

Both cases presented in this series involved lower lip mucoceles with a clear history of trauma or habitual lip biting, supporting the widely accepted etiological role of mechanical injury in the development of mucus extravasation phenomena. The clinical presentation in both patients—painless, soft, fluctuant swellings with a cystic consistency—was consistent with classical descriptions of extravasation mucoceles reported in previous studies [3]

.

A key diagnostic consideration in such lesions is differentiation from other cystic or nodular lesions of the lip, including fibromas, lipomas, hemangiomas, lymphangiomas, and minor salivary gland neoplasms. In both cases, the characteristic location, bluish hue, fluctuant nature, and history of intermittent swelling and rupture favored a clinical diagnosis of mucocele. Although histopathological examination remains the gold standard for definitive diagnosis, the classic clinical features in these cases allowed for confident provisional diagnosis, with histopathology serving as confirmatory evidence when performed [4].

Management of oral mucoceles remains a subject of discussion, with various treatment modalities described in the literature. Conservative approaches, including observation and intralesional corticosteroid injections, have been advocated for small, asymptomatic lesions. However, such methods are associated with variable success rates and a higher likelihood of recurrence, particularly in cases where the causative salivary gland tissue remains intact [5].

Surgical excision continues to be regarded as the most definitive and predictable treatment modality for oral mucoceles, particularly for recurrent or persistent lesions. Complete excision of the lesion along with adjacent minor salivary glands significantly reduces recurrence rates by eliminating the source of mucus extravasation. In both cases presented, careful surgical technique was employed to excise not only the cystic lesion but also the surrounding glandular tissue, resulting in uneventful healing and absence of recurrence during follow-up [6].

Alternative treatment modalities such as marsupialization, laser ablation, and cryotherapy have been reported with varying degrees of success. While laser therapy offers advantages such as reduced intraoperative bleeding, minimal postoperative discomfort, and faster healing, some studies suggest a comparatively higher recurrence rate due to incomplete removal of glandular tissue [7]. Marsupialization, although useful for larger lesions, carries a similar limitation and is therefore considered less definitive than complete excision [8].

The absence of postoperative complications and recurrence in the present case series reinforces the importance of meticulous surgical planning and execution. Attention to complete removal of the lesion and associated minor salivary glands, along with patient education regarding avoidance of lip trauma, plays a crucial role in long-term success.

Overall, the findings of this case series align with existing literature and further support surgical excision as the treatment of choice for lower lip mucoceles, offering excellent functional and aesthetic outcomes with minimal morbidity.

CONCLUSION

Oral mucoceles are common benign lesions of the oral cavity with a favorable prognosis. While conservative management may be considered in selected cases, surgical excision remains the gold standard, particularly for persistent or recurrent lesions. Proper surgical technique and removal of the involved salivary glands are key to preventing recurrence.

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