

MANAGEMENT OF MUCOCELE OF LOWER LIP: CASE SERIES

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ABSTRACT

Mucocele is one of the most common salivary gland lesions of the oral mucosa, resulting from the accumulation of mucous secretion due to habits like lip biting, trauma, or any alteration of minor salivary glands. They are of two types based on histological features, i.e., extravasation and retention. They appear mainly on the lips but can occur anywhere in the oral cavity such as cheeks and the floor of the mouth. Diagnosis is mostly based on clinical findings. The most common location of extravasation mucocele is the lower lip. Mucocele most probably affects patients of a young age group but can occur at any age. They may present as soft, bluish, and translucent cystic swellings, with a history of bursting and collapsing, due to which they resolve themselves and then refill, which may be repeated. We present a case series of mucocele in the lower lip which was treated with surgical removal under local anesthesia.

KEYWORDS: Diagnosis, excision, lower lip, minor salivary glands, mucocele, mucous cyst

INTRODUCTION

The term mucocele was derived from the Latin words mucus and coele, meaning cavity. [1] Mucocele is defined as a mucus-filled cyst that may appear in the oral cavity, appendix, gallbladder, paranasal sinuses, or lacrimal sac. [2] They represent the 17th most common lesion of the oral cavity. [3] The lower labial mucosa is the most frequently affected site, but can also develop in the cheek, tongue, palate, and floor of the mouth, where it is called Ranula. [1]

Two types of mucocele can appear in the oral cavity, namely, extravasation and retention type. In children, extravasation mucoceles are common, while retention type mucoceles are very rare. [4] Extravasation mucocele results from a broken salivary gland duct causing mucin to spill into the soft tissues around the gland. These extravasation mucoceles undergo three evolutionary phases:

1. **Initial phase:** Mucin spills diffusely from the excretory duct into the connective tissues.
2. **Resorption phase:** A foreign body reaction occurs, leading to granuloma formation.
3. **Final phase:** A pseudocapsule (without epithelial lining) forms around the mucosa. [5]

Blockage of the salivary gland duct causing decreased or absent glandular secretion results in retention mucocele. [6] Oral mucoceles are usually dome-shaped enlargements with intact epithelium. [7]

Extravasation type is a pseudocyst without a defined wall and is caused by mechanical trauma to the excretory duct of the gland, leading to transection or rupture, with consequent extravasation of mucin into the connective tissue stroma. These are frequently seen on the lower labial mucosa, buccal mucosa, and retromolar area, and are not lined by epithelium. [4] Mucin extravasation triggers a secondary inflammatory reaction, and many patients report periodic discharge of viscous fluid from the lesion.



Retention type is less common than extravasation and usually affects older individuals. It is frequently seen on the upper lip, hard palate, floor of the mouth, and maxillary sinus. [4,5,9] In mucous retention phenomena, mucin may be retained in the duct and/or acini as a result of duct obstruction by sialolith or stricture. [10] Ductal narrowing can occur due to frequent

mouthwashing with hydrogen peroxide, deodorant mouthwashes, tartar-control toothpaste, or anti-plaque solutions, which may irritate the mucosa. [11]

The diameter of mucocles may range from a few millimeters to a few centimeters. If left untreated, episodic decrease and increase in size may occur due to rupture and subsequent mucin production. This case series aims to explain the history, clinical features, and surgical removal of mucocles using a simple surgical technique, enhancing the knowledge of the general dental practitioner.

CASE REPORT 1

A 24-year-old male patient came to the Department of Oral and Maxillofacial Surgery, MM College of Dental Science and Research, Mullana, Ambala, with the chief complaint of



swelling in the right lower lip region. The swelling was present on the inner aspect of the lower lip in the region of teeth 42, 43, and 44 [Figure 1a] for the past 2 months, initially small and progressively increasing. The patient reported trauma to the lower lip 5 months prior. The swelling was painless, and no past medical history like fever or malaise was present.

On examination, the lesion was round, measuring 1.5 cm × 1.5 cm, soft, fluctuant, and palpable with no increase in temperature [Figure 1a]. Intraoral examination revealed generalized soft debris and calculus in the lower anterior region. Routine blood investigations were within normal limits. The case was diagnosed as mucocle based on history of trauma and clinical features.

Treatment was planned under local anesthesia after obtaining patient consent. Surgical removal involved a vertical incision, splitting the overlying mucosa, and resecting the mucocle from the base [Figure 1b]. Sutures were placed [Figure 1d] and removed after 7 days. Resected tissue [Figure 2c] was sent

for histopathological examination. The patient was reviewed monthly for 6 months, with no recurrence observed.

Histopathology revealed hyperplastic parakeratinized stratified squamous epithelium over moderately collagenous connective tissue with fibroblastic response. Aggregation of lymphocytes, minor salivary gland acini, ducts, and mucous exudate were suggestive of Mucous Extravasation Cyst.

CASE REPORT 2

A 19-year-old male reported to a private clinic in New Delhi with swelling in the right lower lip region, present for 4 months. The swelling was painless, associated with fluid discharge, and would decrease in size and reoccur over time. The patient had undergone surgery for the same in 2018 and reported a history of lip biting. Past medical history was noncontributory. Orthodontic treatment had been completed two years prior.

On examination, the lesion was round, 1 cm × 1 cm, soft, fluctuant, and palpable [Figure 2a]. Overbite was present. Routine blood investigations were normal. The lesion was diagnosed as mucocle based on trauma history and clinical features.

Surgical excision was performed under local anesthesia, using a circumferential incision to split the overlying mucosa and resect the mucocle along with adjacent minor salivary glands. Corono-plasty of the upper incisor region was also performed. Sutures were placed [Figure 2d] and removed after 7 days. Resected tissue [Figure 2c] was sent for histopathological examination. The patient was reviewed monthly for 6 months with no





mouthwashing with hydrogen peroxide, deodorant mouthwashes, tartar-control toothpaste, or anti-plaque solutions, which may irritate the mucosa. [11]

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CASE REPORT 1

A 24-year-old male patient came to the Department of Oral and Maxillofacial Surgery, MM College of Dental Science and Research, Mullana, Ambala, with the chief complaint of recurrence.

Histopathology revealed moderately collagenous connective tissue overlined by hyperplastic parakeratinized stratified squamous epithelium, with fibroblastic response, lymphocyte aggregation, minor salivary gland acini, ducts, and mucous exudate, consistent with Mucous Extravasation Cyst.

CASE REPORT 3

A 28-year-old male presented to a private clinic in Karnal, Haryana, with swelling in the left lower lip region, present in the region of teeth 32, 33, 34 [Figure 3a]. The patient had undergone treatment for the same lesion 1 year prior, but it recurred a month ago. The lesion was associated with fluid discharge.



The lesion was oval, measuring 2 cm × 1.5 cm, soft, fluctuant, palpable, not attached to underlying structures, with no increase in temperature [Figure 3a]. Routine blood investigations were normal. The patient consented for surgical excision under local anesthesia. A vertical incision was placed, blunt dissection performed, and the mucocle exposed [Figure 3b]. Sutures were placed [Figure 3d] and removed after 7 days. Histopathology [Figure 3c] confirmed Mucous Extravasation Cyst. The patient was reviewed monthly for 6 months with no recurrence.

DISCUSSION

Mucocele is a clinical term describing swelling caused by pooling of saliva from a severed or obstructed minor salivary gland duct. [5] The incidence in the general population is 0.4–0.9%, with no gender predilection. [3] It is a self-limiting mucous-containing cyst commonly occurring in the oral cavity, with rapid onset and fluctuating size. [3] Decrease in size may be due to rupture of the lesion, with subsequent mucin accumulation or reabsorption causing the lesion to reform. [11]

Lips contain adipose tissue, connective tissue, blood vessels, nerves, and salivary glands; pathology of any of these can produce swelling. Differential diagnosis includes mucocele, fibroma, lipoma, mucous retention cyst, sialolith, phlebolith, and salivary gland neoplasm. Clinical appearance, color, consistency, etiology, and location help distinguish mucocele. Yamamoto et al., 1990, highlighted trauma and obstruction of salivary gland ducts as main etiological factors. [12] Conventional surgical removal is the most common treatment. Elliptical incision is popular to reduce the extent of mucosal tissue loss, prevent fibrous scar formation, and avoid spilling cystic content, which could cause recurrence. [10] To reduce recurrence, lesions should be removed down to the muscle layer, surrounding glandular acini excised, and damage to adjacent glands and ducts avoided while placing sutures.

CONCLUSION

Due to its high recurrence rate, management of mucocele is challenging. Surgical excision with dissection of surrounding and contributing minor salivary gland acini has proven successful with minimal recurrence. Simple surgical excision remains the treatment of choice, and when done carefully, is the best modality.

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