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Intralesional Betamethasone in Management of a Large Recurrent Labial Mucocele: A Case Report and Review of Literature

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Abstract

Context: Oral mucocele is one of the most common lesion affecting the minor salivary glands and is commonly known to affect the lower labial mucosa with trauma from lip biting being one of the frequent causative factors. The diagnosis of a mucocele is in its clinical presentation of a clear fluid filled or a bluish translucent bump on the labial mucosa with history of regression and recurrence. Amongst various methods available for its management, surgery has been a mainstay of treatment but is known to be associated with lip disfigurement, damage to adjacent canaliculi and development of satellite lesions.

Aim: The aim of this study was to describe a case of recurring lower labial mucocele, treated by a non-surgical approach using intralesional betamethasone and to evaluate the outcome of this treatment so that a non-invasive management of such lesion may be used as an alternative to surgery.

Result: Complete regression of the mucocele was seen with application of intralesional Betamethasone.

Conclusion: Intralesional Betamethasone may be opted as an alternative to surgery in management of labial mucocele.

Keywords: Oral Mucocele, Intralesional Corticosteroids, Betamethasone, Case Report.

Introduction:

Salivary mucocele, a common lesion of the small salivary glands, usually manifests as a single lower lip enlargement that is transparent or blue in color. Rupture and/or obstruction of the excretory ducts can result from blunt trauma, such as lip biting or injury from neighboring teeth to small salivary glands, and this may lead to extravasation and deposition of salivary mucus inside the connective tissue.Mucoceles can be classified into two types: extravasation type, which is generally observed on the lower lip, and retention type, which is less common and usually found in the cheek or palate of older individuals. Mucoceles may range from a few millimeters to several centimeters in diameter and may rarely be painful. Many patients describe that sticky fluid occasionally leaks from the lesion. The area where mucoceles

most commonly occur is the lower lip [1,2]. The differential diagnosis of mucocele includes fibroma, lipoma, hemangioma, traumatic neuroma, schwannoma and salivary gland tumors.[3, 4] Numerous noninvasive techniques have been developed to treat mucocele, including marsupialization, cryosurgery, and steroid injection. These techniques were developed in response to a number of unpleasant post-operative consequences, such as lip deformity and injury to surrounding ducts with subsequent formation of satellite lesions.[5] Recurrence of Oral Mucocele is not uncommon, despite the fact that thorough surgical excision with conventional scalpels or lasers continues to be the best course of treatment. Few studies, nevertheless, have attempted to identify the factors that will indicate whether Mucocele would recur.[6]

This report details a case of a mucocele in a 20-year-old male, highlighting effective treatment strategies using corticosteroids.

REPORT OF A CASE

Chief Complaint: We present a case report of a 20 year old male patient who presented to the Department of Oral and Maxillofacial Surgery, Guru Nanak Institute of Dental Sciences and Research, Kolkata with a chief complaint of a swelling in his lower lip.

History of Present Illness: The patient presented with a swelling in the lower lip that had been gradually increasing in size over the past 5 months and gave a history of spontaneous rupture and resolution followed by a similar swelling recurring later at the same site of complain. The swelling emanated a mucinous fluid on rupture as elicited by the patient. The lesion was asymptomatic but caused cosmetic concern for the patient and difficulty while grasping food. No history of trauma or other associated symptoms was reported. Though the patient's parents provided a positive history of lip biting habit of the patient.

Clinical Examination: On examination, a well-circumscribed, fluctuant swelling was noted on the lower lip, approximately 2 cm x 1.5 cm in diameter as measured by a vernier caliper . There was no tenderness, erythema, or other signs of infection. The lesion was palpated, confirming its cystic nature.

Fig 1. Clinical presentation of the patient on the first day with a cystic swelling in the lower lip.

Diagnosis: Based on clinical presentation and findings of the physical examination, a diagnosis of mucocele was established. No further imaging or biopsy was required at this stage as the classic presentation was sufficient for diagnosis.

Treatment: The patients written consent was taken for carrying out the procedure and all the probable outcomes of the treatment method instilled was provided to the patient. At the onset of the treatment, topical anesthesia was applied in form of lignocaine topical spray and the mucus content of the lesion was aspirated with the help of a 22 gauge needle and a syringe.Following evacuation of the fluid from the mucocele, 1mL of Betamethasone (4mg/mL) was injected with the help of a 1.0mL [8mm (5/16 inches) x 31G] insulin syringe. The insulin syringe provided for a less painful means of precise drug delivery without spillage at the base of the lesion as well as perilesional. The patient was called once a week for evaluation and 1mL of Betamethasone was injected until the lesion resolved for a maximum of 4 doses over 4 weeks.

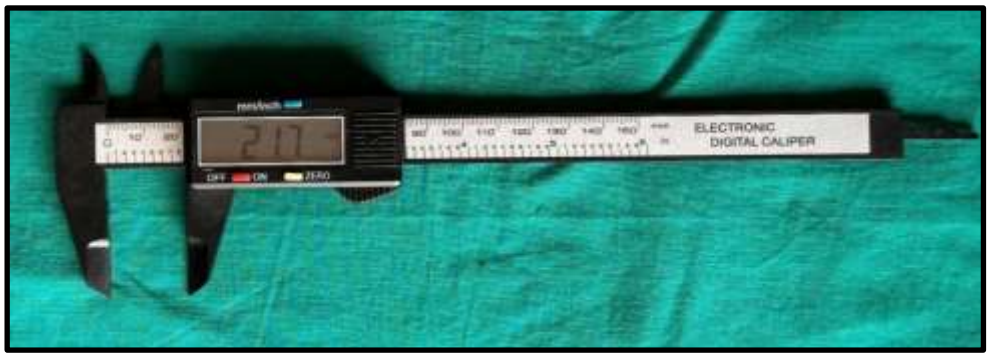

Fig 2. Digital Vernier Caliper

Fig 3. Injection Betamethasone (4mg/mL) and Insulin Syringe.

Fig 4. Intralesional and perilesional injection of 1mL of Betamethasone (4mg/mL).

Follow-up and Outcome:-

2 Week Follow-Up: The patient reported a significant reduction in the size about 1cm x 0.5 cm of the swelling, which was measured to be less than half of its original size.

4 Weeks Follow-Up: Follow-up examination revealed complete resolution of the mucocele with no residual swelling observed i.e after a total dose of three injections.

8 Weeks Follow-Up: The lesion continued to be completely resolved with no new symptoms and recurrence noted over the previously affected labial mucosa.

9 Months Follow-Up: The Patient was called for follow-up at 1st, 3rd, 6th and 9th month; and continued to be symptom-free with no evidence of recurrence of the mucocele.

Fig 3. Complete resolution of the mucocele at 4 weeks Follow-up.

Fig 4. Symptom free labial mucosa without recurrence at 9 months Follow-up.

Result:

Complete regression of the lesion was seen and no postoperative complications were elicited by the patient barring mild discomfort and pain which resolved in a few hours post treatment.

Discussion and Review of Literature:

Mucoceles are frequent oral mucosal lesions involving small salivary gland tissue. The most commonly afflicted area is the lower lip. Oral mucoceles were previously believed to be the result of an excretory duct blockage, which led to mucus backpressure and the development of an epithelial-lined cyst. However, it is now well acknowledged that the majority of mucoceles are brought on by trauma, injury, or the severance of an excretory duct, which allows mucus to escape and enter surrounding tissue. According to histopathology, mucous extravasation cysts and mucous retention cysts are the two different kinds of mucoceles.[7]

According to a study by Bouquot et al.,[8] which examined the epidemiology of benign oral masses in 23,616 adults over 35, there were 2.5 lesions per 1,000 people with oral mucoceles overall. The most common location is the lower lip; the other sites include the cheek, palate, floor of the mouth, tongue, and retromolar fossa. Seldom is the upper lip impacted. The majority of people with mucoceles are children and young adults. There are two different kinds of mucoceles based on histopathology: mucous extravasation cysts and mucous retention cysts. These latter represent a tiny fraction of mucoceles and are more common in older individuals. The second decade of life is when the lesion is most common.

Mucoceles often resolve on their own. Lesion rupture may be the reason of the size decrease, while mucin accumulation or saliva deposit reabsorption may lead to lesion reform. Surgical excision, CO2 laser ablation, cryosurgery, micromarsupialization, marsupialization, electrocautery, laser vaporization or laser surgery, and intralesional injection of corticosteroids or sclerosing agent are some of the therapy options.[9] Corticosteroids are the most potent anti-inflammatory agents, inhibiting the expression of multiple inflammatory genes (encoding cytokines, chemokines, adhesion molecules, inflammatory enzymes, receptors, and proteins) and potentially increasing the transcription of genes coding for anti-inflammatory proteins such as lipocortin-1, interleukin-1, and interleukin-10 receptor antagonist. They also operate as a sclerosing agent, resulting in shrinking of dilated salivary ducts [10].

Similar case studies have been reported by Baharvand et al. (2014) [5] wherein mucoceles were treated with dexamethasone and resolved completely while others showed reduction in size. No long standing complication was experienced postoperatively. Mortazavi et al. (2014) [7] treated a large labial mucocele with combined intralesional dexamethasone and micro marsupialization which led to complete healing and Sinha et al (2016) [9] elaborated non-surgical management of oral mucocele. Ronal et al (2024) [11] described Triamcinolone Acetonide Injection and Topical as an alternative method for mucocele therapy.

Conclusion:

This case illustrates the successful management of a mucocele in a young male patient with corticosteroid injections. Given the favorable outcome and the avoidance of surgical intervention, this approach may be beneficial for similar cases in the future. Further studies could be beneficial to investigate the long-term efficacy and optimal dosage of corticosteroid injections in treating mucoceles.

Informed Consent:

Written informed consent was obtained from the patients for publication of this research article and accompanying images.

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Conflict of Interest: The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial or nonfinancial in this article.

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