

Oral Mucocele: A Case Report

¹Prasad Diwakar Bhange, ²Shantanu Niteen Joshi

M.D.S. (Oral and Maxillofacial surgery) Assistant Professor, Department of Dentistry, King Edward Memorial Hospital, Acharya Donde Marg, Parel, Mumbai, Maharashtra, India

B.D.S. Private practitioner, Asmita's Dental Clinic, Vasai West, Palghar, India

Abstract: Mucocele is the most common lesion of the oral mucosa, which results from the accumulation of mucous secretion due to trauma and lip biting habits or alteration of minor salivary glands. This leads to aggregation of mucus in a single location causing circumscribed swelling. Commonly they are divided in two types based on histological features which as follows: Extravasation and retention. Clinically they consist of a soft, bluish and transparent cystic swelling. Being one of the most common benign soft tissue masses that occur in the oral cavity its diagnosis is mostly based on clinical findings. These lesions can be seen in innumerable areas of the oral mucosa as lips, cheek and the floor of the mouth. However the out of the most the commonest location of the extravasation mucocele is the lower lip and the treatment of choice (out of the many) is surgical removal. This paper draws us into the phenomenon and a case report has been presented regarding the same.

Keywords: Mucocoele, cyst, mucus retention cyst, mucus extravasation cyst, lip swelling, Salivary gland, Diagnosis, excision.

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I. Introduction

The term mucocoele is derived from the Latin word Mouco: meaning mucus and Coele: meaning cavity. They are basically "mucus filled cavities" usually present in the oral cavity, lacrimal sac, and paranasal sinuses, appendix, gallbladder.

By definition, they are not true cysts. The incidence is high, in the order of 2.5 lesions per 1000 individuals. Indeed, mucoceles are the most common minor salivary gland disorder, and represent the second most frequent benign soft tissue tumors of the oral cavity, following irritative fibromas.

Clinically they are classified in two categories: **Mucous extravasation and mucous retention types.**

Extravasation type is due to the leaking of fluid from the damaged salivary gland ducts and acini into the surrounding soft tissues, mostly seen in minor salivary glands.

Retention type is due to the blockage of salivary gland duct, seen commonly in major salivary gland ducts. Clinically there is no difference between both.

Mucoceles present as bluish, soft, transparent cystic swelling that frequently resolve spontaneously. Blue colour is due to vascular congestion, cyanosis of the tissue above, and accumulation of fluid below. Mucoceles can be single or multiple often rupturing and leaving slightly painful erosions that usually heal within few days (Ata-Ali et al., 2010, Dr. Hrishikesh Karpe et al. 2017)

However, colour may vary depending on the size of the lesion, proximity to the surface, and elasticity of overlying tissue. When this mucocele is located in floor of the mouth it appears as the underbelly of a frog, hence called as ranula.

Etiopathogenesis:

The two main etiological factors are: **1. Trauma, 2. Obstruction of salivary gland duct, 3. Atresia**

Physical traumas could cause calculus formation, scarring, obstruction of the mucin plug, crushing of the duct. Mainly physical trauma can cause spillage of salivary secretion into surrounding sub mucosal tissue. After which the inflammation may become obvious due to stagnate mucous. Habit of lip biting and tongue thrusting are also one of the aggravating factors. The extravasation type will undergo three evolutionary phases.

Primary stage there will be mucous spillage from salivary duct in to the surrounding tissues showing the presence of histiocytes and leucocytes.

Secondary phase called resorption phase, granulomas re-appear due to the presence of histiocytes, macrophages and giant multinucleated cells associated (typically Langerhans's Giant cells) with a foreign body reaction.

Tertiary phase is presented by pseudo capsule without epithelium around the mucosa due to connective cells. The retention type of mucocele is commonly seen in major salivary glands due to the dilation of duct caused by a sialolith or dense mucosa.

Cysts of the major salivary glands predominantly affect the parotid; and these lesions are characterized by slow enlarging painless soft tissue swelling of the gland. (Purkiratet all 2010)

Although minor salivary glands are found in most parts of the oral cavity except the gingiva, mucoceles occur most commonly in the lower lip, probably due to the higher incidence of mechanical trauma in this region.

Children and young adults are most commonly affected, although these lesions can occur at any age. Both sexes are equally affected.

Generally, small and superficial mucoceles do not require treatment because they often heal after spontaneous rupture.

Treatment options include surgical excision, marsupialization, micro marsupialization, cryosurgery, laser vaporization, and laser excision. However, in most cases, the treatment of choice is excision. The lesions can be completely excised, including the associated salivary gland tissue as well as any marginal glands, before primary closure, reducing the incidence of recurrence.

II. Case Report

Clinical examination

A 19 years old male patient had reported with the chief complaint of swelling present in the lower lip since the last 4 weeks. The patient was apparently all right four weeks back when he noticed a small swelling in the lower lip initially.

In the first week patient suggested that the swelling was small in size, had no significant changes in colouration of the underlying mucosa.

Second and third week, patient was of the opinion that swelling grew a bit larger in size along with reddish-bluish colouration of the underlying mucosa. As the fourth week approached the swelling grew considerably and occasionally presently with pain sensation on intake of hard foods, along with being disturbing for socializing with people. He gave history of lip biting habit.



Fig1: Mucocele seen on medial aspect of the Lower lip with respect to tooth number#42 & tooth number#43

Fig2: Mucocele showing the presence of whitish sclera and reddish-blue hue circumscribed margins caused mechanical injury (lip biting)

There was no pain associated with the swelling. His past medical, dental and drug history were not significant. There were no contributory or concerning family history.

On extra oral examination, the face appeared bilaterally symmetrical, with competent lips and the lymph nodes were not palpable. On oral examination a solitary round sessile palpable fluctuant non-tender swelling with no increase in temperature was present on the right lower labial mucosa with respect to tooth

number#42 and tooth number#43. The swelling had a reddish blue hue compared to the adjacent mucosa. There was no difficulty in speaking or chewing. There was no evidence of calcification or retained foreign body present. No other oral anomalies were detected. Based on the history and clinical features a provisional diagnosis of mucocele with respect to #42, #43 was given.

Investigations Performed:

Investigations Performed:Haematological.

Haematological examinations including hemogram, bleeding and clotting time were found to be within normal physiological limits.

Other Investigations like Computerized Tomography and Microscopic were not rendered to the patient owing to clear signs and symptoms pertaining to mucous cysts of the salivary glands.

Differential diagnosis:

The differential diagnosis consisted of fibroma, lipoma soft tissue abscess, oral hemangioma, oral lymphangioma, benign and malignant salivary gland neoplasms, Cicatricialpemphigoid, and Bullous lichen planus.

Fibromas vary in consistency from soft to very firm. They are the most common intraoral soft-tissue lesion and are seen most frequently on the lips.

Lipomas, neoplasms consisting of mature adipose tissue, are uncommon in the oral cavity, but can occur on the lips. Lipomas and tumours of minor salivary glands present no fluctuation while cysts, mucoceles, abscess, and hemangiomas show fluctuation.

There also seen formation of a fibroepithelial polyp which shows formation of short, narrow stalk and skin tags which are usually harmless and painless.

Vascular malformations such as hemangiomas and varices are usually blue in colour, blanch under digital pressure. The appearance of mucoceles is pathognomonic and the following data are crucial: lesion location, history of trauma, rapid appearance, variations in size, bluish colour and the consistency. Based on history and clinical examination a provisional diagnosis of mucocele was made. Surgical excision of the lesion was planned using scalpel under local anesthesia.

Treatment of the Lesion:

The Treatment modalities have been divided Stages: 1. Stage 1st 2. Stage 2nd

Stage 1st : therapy consisted of a thorough scaling and root planing and oral hygiene instruction were given. The patient was demonstrated the proper brushing technique (Modified Bass Technique). Patient was advised 0.2% chlorhexidine mouth-rinse 10 ml, 1:1 dilution, twice daily for 15 days.

Stage 2nd : It consisted of surgical excision of the lesion under local anesthesia. The patient was explained about the procedure and informed consent was obtained. Local infiltrative anesthesia was applied around the lesion. The anesthetic was not infiltrated directly into the lesion to avoid compromising the biopsy. The lip was then everted with digital pressure to increase the lesion's prominence. First a semi-circular incision was made around the lesion to obtain a proper biopsy sample and to decrease the extent of mucosal tissue loss, decreases the incidence of formation of large fibrous scars, and helps to prevent spilling of the cystic content, which could be responsible for recurrence. Dissection was performed, separating the lesion and associated minor salivary gland. To reduce the chance of recurrence, lesion was removed down to the muscle layer, all the surrounding glandular acini were excised, and damage to the adjacent gland and duct were avoided while placing the suture. The surgical site was then thoroughly irrigated and then the wound margins were approximated and sutured with silk sutures. Post-operative instructions were given and analgesics were prescribed. Patient was recalled after 1 week for the removal of sutures and a satisfactory wound healing was seen. No recurrence was seen after a follow up at 1 month, 3 months and 1 year.



Surgical Excision of the Lesion



Wound Margins Approximated by Silk Sutures

The incidence of mucoceles in the general population is 0.4% to 0.8% with scant differences between males and females. Lower lip is considered to be the most frequently affected location (40% to 80% of all cases), followed by the cheek mucosa and floor of the mouth. It is generally determined by a traumatic event that can cause the rupture of an excretory duct of salivary gland and usually appears as solitary fluctuant non-tender swelling in Canine-bicuspid area with a normal pink or bluish colour.

In the present case, the patient gave a history of lip biting habit in the Tooth Number #42, and tooth Number #43 area, which ultimately lead to mucocoele formation at the site due to the repeated trauma

The history and the clinical features are pathognomonic leading to the diagnosis of mucocoele. Fine needle aspiration demonstrates the mucus retention, histiocytes and inflammatory cells. Chemical analysis shows high amylase and protein content. Radiographs are the contributing factors in cases of ranulas. Localization of these lesions is done by Computed Tomography and Magnetic Resonance Imaging .

Histopathologic examination of mucocele often reveals formation of well-circumscribed, cyst-like space surrounded by granulation tissue and the presence of mucinophages in the collapsed wall of granulation tissue. The adjacent salivary gland tissue should also be present because mucocele should always be removed along with feeder glands/ducts which minimize recurrence of the lesion. The present case was diagnosed as mucus extravasation cyst histopathologically. The primary objective in the treatment of mucocele is the complete resection of the lesion in order to prevent its recurrence. We have to ensure that both the affected and neighboring glands are removed along with the pathological tissue to avoid relapse.

Several techniques have been proposed for the treatment of a mucocele, such as cryosurgery, micro marsupialization, marsupialization, surgical excision and laser ablation. The conventional method is the treatment by surgical approach. It does not require extensive equipment, has negligible cost, and can be performed by most trained dentists.

It does require great precision, however, and detailed knowledge of the mucocele and the surrounding anatomy is must . It also requires great control of the instrument, with accurate tactile awareness as there is a chance for rupturing the mucocele and leakage of its contents can cause soft tissue collapse with loss of anatomical references needed for resection. Hence, special care is mandatory to avoid damage to other glands or ducts while suturing because this can even lead to its recurrence.

In Present case report the lesion was excised using scalpel. We didn't experience extensive bleeding and the healing was uneventful. We adopted this procedure mainly because it's easy and economical compared to laser ablation, cryosurgery and electro cautery. Marsupialization has resulted in considerably higher recurrence rates.

Micro marsupialization has been suggested to have lower recurrence rates, although it is restricted to lesions with clinical characteristics that strongly suggested a diagnosis of mucocele, since histopathologic examination is not possible . Cryosurgery has yielded satisfactory results with no recurrence.

Reported postoperative symptoms, however, included marked edema and irritation, as well as a prolonged healing time .

Vaporization with argon and Nd: YAG lasers has been described as a new technique for the treatment of mucoceles. Both lasers procedures presented satisfactory results with low recurrence rates and were well tolerated by the patients, whose discomfort was the main complaint reported . The main advantages of soft tissue laser applications are minimal intraoperative bleeding, swelling and postoperative pain and very less surgical time, scarring, and coagulation, without any need of suturing after excision because of natural wound dressing due to denatured proteins.

III. Conclusion

Mucocele is the most common benign self-limiting condition. Trauma is the most common cause followed by obstruction of the ducts and absence of the glands, and therefore identification and treatment of the associated habits becomes essential. Majority of these lesions are seen in the lower lip which can be disturbing in function and causing extreme difficulty in socializing to the patients. Simple surgical excision is the treatment of choice and when done with care, it is the best treatment that can relieve the patient's anxiety and discomfort, and occasionally intralesional corticosteroid's would be used for treated recurring lesions.

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