

CASE REPORT

Oral mucocele on lower lip.Vishal Kumar¹, Vaishali¹, Farheen¹, Ellora Madan²**Abstract:**

Mucoceles (Muco-mucus and coele-cavity) are cavities filled with mucus. They are one of the most common benign soft tissue masses that occur in the oral cavity. Two types of distinct entities described in relation to the mucoceles include the true mucous retention cysts which are lined with epithelium and the mucous extravasation cysts which occur because of pooling of the mucus into the adjacent tissues in case of trauma to the conducting passages or, ducts. The two main etiological factors for mucoceles are obstruction of salivary gland ducts leading to the so-recognized true mucous retention cysts and traumatic injuries to the mucous carrying ducts leading to the creation of the so-called mucous extravasation cysts. Mucoceles are commonly seen in relation to the lower lip often because of the lipbiting habit leading to the formation of mucous extravasation cysts. The lesions can be solitary or, multiple, often rupturing and leaving, slightly painful erosive areas that usually heal within a span of few days. The lesions may rupture spontaneously with the liberation of a viscous fluid, however, after a few days to weeks, additional fluid accumulates and the lesion is seen to recur. This cycle of rupture, collapse and refilling may continue for months. The present case report presents one such case of a mucocele that was reported in the Department for diagnosis and further, needful.

Keywords: Mucocele; Benign Soft Tissue Lesions, Oral Cavity; Mucous Retention Cysts; Mucous Extravasation Cyst

Introduction

Oral mucocele is a non-neoplastic lesion of salivary gland tissue (also called as *sialocele* and *ptyalocele*)¹. Mucocele (muco - mucus and coele - cavity) by definition, are cavities filled with mucus or pooling of mucin in a cystic cavity². Clinically characterized by single or multiple, painless, soft, smooth, spherical, translucent, fluctuant nodule³.

It is 17th most common minor salivary glands lesion of oral cavity, affecting general population of all age group. There are two types of mucocele i.e., Extravasation and Retention type. Extravasation mucocele occurs due to rupture of salivary gland duct and consequent spillage into the soft tissue around the gland. Retention mucocele occurs due to decrease or absence of glandular secretion produced by blockage of salivary gland ducts^{2,3}

The histological difference between the two variants is that the extravasation type has no epithelial lining and is formed by a mucus pool surrounded by granulation tissue while retention cyst is surrounded by epithelial lining^{4,5}.

Clinically 70% of cases occur in the lower labial mucosa³. The lesion is usually asymptomatic in nature, and patient presenting with a nodular swelling with mild discomfort. Color variation depends on the size and surface proximity of the lesion. Superficial lesions tend to be bluish, whereas deeper lesions may have a mucosal color. Though asymptomatic, treatment is often required due to the size of the lesions and patient's need⁶.

Case Report

A 24-year-old male patient visited the Department of Periodontology, Kothiwal Dental College and Research Centre, with a chief complaint of swelling in left lower lip region since last 3 weeks. On detailed history patient revealed that he had a history of trauma to the left side of the face 1 month back and had mild laceration at the site which healed itself. 2 weeks later, he developed a small swelling which gradually increased in size. He also presented a history of frequently traumatizing the swelling, followed by recurrent swelling in the same region; there was no associated pain. Past medical and dental history was non-contributory. No extraoral asymmetry detected.

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Intra-orally, the lesion was pale pink with bluish hue, which was around 2 - 3 mm in radius having soft and fluctuant consistency with smooth surface and no sign of infection.

Clinical features and history were directed towards

provisional diagnosis of mucocele. So, excisional biopsy was planned, followed by histological analysis (Hematoxylin and Eosin) which confirmed

the diagnosis of Extravasation mucocele.

Surgical procedure:

Extra oral and intraoral asepsis was done by 5% Betadine solution and 0.2% Chlorhexidine mouthwash, 10ml for 1 minute respectively. The procedure was done under local anaesthesia with 2% lignocaine hydrochloride and 1:1,00,000 adrenaline. After adequate anaesthesia was achieved an elliptical incision⁹ was made around the lesion of about 2cm taking care of the surrounding healthier glands and vessels.

The surrounding glandular acini was removed, removing the lesion down to the muscle layer. The sutures were placed to achieve primary closure avoiding any damage to the adjacent gland and duct damage. Complete resolution of the swelling, and the patient was kept under observation for 3 months with no recurrence.

Histological report showed stratified squamous surface epithelium overlying connective tissue stroma. The connective tissue stroma showed a cystic lumen consisting of spilled mucin. The connecting tissue also showed mild infiltrate predominantly consisting of lymphocytes along with numerous minor salivary gland acini which are predominantly mucous in nature.



Figure 1 : Mucocele on left side of inner lip.



Figure 2 : Elliptical incision line



Figure 3 : Glandular tissue removed



Figure 4 : interrupted suture placed.



Figure 5 : Healing after 6 days



Figure 6 : Healing after 10 days.



Figure 7 : Healing after 30 days



Figure 8 : Healing after 8 months.

Discussion

The term mucocoele is derived from a Latin word, mucus, or mucus and coele or cavity. Mucocoele is a self-limiting mucus containing cyst of salivary glands commonly occurring in the oral cavity, with relatively rapid onset and fluctuating size³. They can also be encountered in the appendix, gall bladder, and lacrimal sac. Etiologic factors include trauma to the oral cavity, such as lip biting, piercings, accidental rupture of salivary gland, and cheek biting or it may occur due to dilation of the duct secondary to its obstruction

caused by a sialolith or dense mucosa⁴. The pathogenesis of extravasation type occurs in three phases. In the first phase, there is spillage of mucin from salivary duct into the surrounding tissue in which some leucocytes and histiocytes are seen. In second phase, granulomas appear due to the presence of histiocytes, macrophages, and multinucleated giant cells associated with foreign body reaction followed by pseudo capsule formation in the last phase⁷.

In the present case, the possible cause could be- Pointed cusp tip or frequent habit of lip biting that would have caused trauma to the ducts of minor salivary glands.

Mucocoele frequently occurs in the second decade of life and has no gender predilection. The commonly affected sites are those that are prone to mechanical trauma i.e., lower lip followed by tongue, buccal mucosa, and palate^{3,8}. In a case series by Sinha et al. he postulated lower lip as most affected site (17 cases) followed by buccal mucosa (3 cases)¹¹. These lesions are usually asymptomatic, but they can cause discomfort and difficulty in speaking and chewing if they grow abnormally large in size. The duration of the lesion is not constant and can last for few days to three years.

Mucocoeles frequently resolve spontaneously. The decrease in size may be due to rupture of the lesion whereas subsequent mucin accumulation or reabsorption of saliva deposits may cause the lesion to reform. There are various treatment modalities which include surgical removal, CO₂ laser ablation, cryosurgery, micro-marsupialisation, marsupialisation, electrocautery, laser vaporization or laser surgery, and intralesional injection of corticosteroids or sclerosing agent.

Conventional surgical procedure in the management of oral mucocoele includes excision of the lesion along with the affected gland. The recurrence rate is very low and is considered as a definitive treatment plan. While removing the mucocoele surgically, remove the surrounding glandular acini, removing the lesion down to the muscle layer and avoiding the adjacent gland and duct damage while placing the suture will reduce the chances of recurrence¹³. The comparative study conducted by Bahadure et al on the success of conventional surgical management of oral mucocoele in a group of subjects in the transitional period from mixed dentition period to permanent dentition proved that conventional surgical management of the mucocoeles in the paediatric patient is the definitive treatment modality. An elliptical incision placed followed by surgical enucleation of the affected gland along with mucocoele would result in minimal soft tissue injury and minimal scarring¹⁴.

Other treatment modalities such as marsupialisation, was not used as the lesion was small. The management of mucocoele can also be done using DIODE LASER and CO₂

LASER¹², which has given similar results as that of conventional management.

The comparative study between conventional surgical procedure and CO₂ LASER ablation showed better clinical outcome with latter with no complication and recurrence than former¹⁵. Low Pulse LASER¹⁶ through its photochemical, physical and biological effect stimulates increased production of ATP which result in accelerated cell division especially fibroblast, epithelial and endothelial cell and rapid production of extracellular matrix. The accelerated microcirculation leads to faster re-absorption of oedema and disposal of intermediates by causing faster changes in Capillary Hydrostatic Pressure.

Conclusion

The management of mucoceles becomes challenging because of high possibility of recurrence. It can be done surgically or non-surgically. The choice of the treatment depends on the size of the lesion, site, the age of the patient, the depth of the lesion and availability of the materials. The superficial lesions in children can be managed by micro-marsupialization whereas, for deep-seated lesions and recurrent lesions with fibrosis, surgical excision of the lesion along with involved minor salivary gland will be a better option in the management of mucocele. The LASER and Cryosurgery may be useful if available in the clinical setup. However, if no spontaneous regression occurs, surgical

excision with dissection of the surrounding and contributing minor salivary gland tissue often leads to clinical success without recurrence and better prognosis.

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