

An Overview on Oral Mucocele

Running title: Oral mucocele

Ghayathri Vijaya Kumaran,

*Saveetha Dental College and Hospital,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Velappanchavadi, Chennai- 600077, Tamil Nadu, India.*

Nithya Jagannathan

*Senior Lecturer
Department of Oral Pathology,
Saveetha Dental College and Hospital,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University,
Velappanchavadi, Chennai- 600077, Tamil Nadu, India.*

Corresponding Author:

Dhanraj Ganapathy

*Professor and Head, Department of Prosthodontics
Saveetha Dental College
Saveetha Institute of Medical and Technical Sciences
162, Poonamallee High Road,
Velappanchavadi,
Chennai- 600077*

Email- dhanrajmganapathy@yahoo.co.in.

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Abstract:

Mucocele is a common lesion of the oral mucosa that results from an alteration of minor salivary glands due to a mucous accumulation. The most frequent localizations of these lesions are the lower lip mucosa. It also presents on other locations like tongue, buccal mucosa, soft palate, retromolar pad and lower labial mucosa. Two histological types exist, extravasation and retention. Mucoceles can appear at any site of the oral mucosa where minor salivary glands are present. Mucoceles can affect the general population but most commonly young patients between the age of 20-30 years. Clinically, they consist of soft bluish and transparent cystic swelling which occurs spontaneously.

Keywords: *Mucocele, minor salivary glands, extravasation, retention and buccal mucosa.*

Introduction:

The former is a swelling of connective tissue consisting of a collection of fluid called mucin. This occurs because of a ruptured salivary gland duct usually caused by local trauma (damage), in the case of mucus extravasation phenomenon, and an obstructed or ruptured salivary duct (Parotid) in the case of a mucus retention cyst. The mucocele has a bluish translucent colour, and is more commonly found in children and young adults. (Barankin et al., 2005) Although the term cyst is often used to refer to these lesions, mucoceles are not strictly speaking true cysts because there is no epithelial lining. Rather, it would be more accurate to classify mucoceles as polyps for an example, lump. There are two types of mucocele which can appear as extravasation and retention. Extravasation mucocele results from a broken salivary glands duct and the consequent spillage into the soft tissues around the gland. (Bentley et al., 2003) Retention mucocele appears due to decrease or absence of glandular secretion produced by a blockage of the salivary gland ducts. When located on the floor of the mouth and these lesions are called Ranulas. They are rarely found on the upper lip. (Har-El et al., 1997) As their name suggests they are basically mucus lined cysts and they can also occur in the Paranasal sinuses most commonly the frontal sinuses, the frontoethmoidal region and also in the maxillary sinus. (Chi et al., 2011) Sphenoid sinus involvement is extremely rare. When the lumen of the vermiform appendix gets blocked due to any factor, again a mucocele can form.

Discussion:

Oral mucoceles are asymptomatic lesions in most cases, but, in a few instances, when appearing as multiple and recurrent lesions they may cause severe pain. The lower lip is the most common site, although they can be found in any region where there are

salivary glands, but rarely in the palate, retromolar space and the buccal mucosa. (Tran & Parlette, 1999) Mucus is produced exclusively by the minor salivary glands and is also the most important substance secreted by the major sublingual salivary gland. Mucoceles can appear by an extravasation or retention mechanism. Extravasation mucocele are caused by a leaking fluid from surrounding acini. This type of mucocele is commonly found on the minor salivary glands. Moreover, physical trauma can cause a leakage of salivary secretion into surrounding submucosal tissues. (Jensen, 1990) Inflammation is obvious due to stagnant mucus resulting from extravasation.

Characteristics:

The size of oral mucoceles vary from 1 mm to several centimetres and they usually are slightly transparent with a blue tinge. (Sugerman et al., 2000) On palpation, mucoceles may appear fluctuant but can also be firm. Their duration lasts from days to years, and may have recurrent swelling with occasional rupturing of its contents. Mucocele is the common salivary gland disorder and it is the second most common benign soft tissue tumour in the oral cavity. (Ishii et al., 2009) They are characterized by accumulation of mucoid material with rounded, well circumscribed transparent, bluish coloured lesions of variable size. It is a soft and fluctuant asymptomatic swelling with rapid onset which frequently resolves spontaneously. (Silva et al., 2004) Common in the lower lip but may occur in other locations also. The bluish discoloration is mainly due to the vascular congestion and cyanosis of the tissue above and the fluid accumulation below. It also depends on the size of the lesion and proximity to the surface and upper tissue elasticity. They are usually doom shaped swellings with intact epithelium.

Symptoms:

Mucoceles often show up on the inside of your lower lips, your gums, the roof of your mouth, or under your tongue. Those on the floor of the mouth are called ranulas. (Wood & Goaz, 1997) Mucocele may often go unnoticed, however some individuals may report certain symptoms that may arise due to discomfort. (Yamasoba et al., 1990) However in most cases, the condition is painless.

- A small bump most often under the tongue is observed. A bump may also be observed on other areas, along the floor of the mouth. The bump is often translucent or bluish in colour and often hard to touch.
- The swollen bump may interfere with the ability of the individual to swallow food. In case the bump is large enough it may also interfere with the individual's speech and include chewing food.
- In some cases, the condition may be associated with excessive salivation in the mouth.

There are two phenomenons which explain the etiology of oral mucocele:

1. Mucus extravasation phenomenon explains oral mucocele arising from the rupture in the salivary gland that resulted from trauma and thereby resulting in swelling of the connective tissue that composed of the mucus that accumulated.
2. Mucus retention cyst explains the onset of oral mucocele as a result of obstruction or rupture of the salivary gland.

Causes:

It is usually caused due to obstruction or rupture of a salivary gland duct in the mouth, which results in the swelling of a part of the gland. (Guimarães et al., 2006) There are few causes of oral mucocele which is commonly known.

- Mouth injury may result in the damage to the duct, which in turn may result a mucocele
- Habitual biting of the lip and other mouth areas may also increase the risk of injury to the duct.
- Gum infection or disease of the oral cavity can result in infection of the duct, which in turn may obstruct the duct and form a mucocele.

The trauma in the salivary gland may be the result of the following:

- Mechanical injury during the process of mastication where the tissue of the lower lip gets caught between the teeth in the maxillary anterior and in the mandibular anterior.
- Habitual biting of the lip may accidentally bite the salivary gland resulting in trauma subsequently the onset of oral mucocele.
- Crush type injury can also result to oral mucocele
- Chronic irritation of the oral cavity such as from cigarette smoking and extreme heat can injure the salivary gland.
- Surgical procedures in the oral cavity may also cause trauma to the salivary gland.
- Congenital mucocele in newborn babies is believed to be the result of birth trauma affecting the oral cavity.

Treatment:

Conventional surgical removal is a most common method used to treat this lesion. Other treatment options include CO₂ laser ablation, cryosurgery, intralesional corticosteroid injection, micro marsupialization, marsupialization and electrocautery. (Bermejo-Fenoll & López-Jornet, 2006) Extravasation and retention type of mucoceles clinically appears the same so that the treatment option for both the types are same. Moreover, small

sized mucoceles are removed with marginal glandular tissues and in case of large lesions marsupialization needs to be taken. Lacrimal catheters are used to dilate the duct to remove the obstruction of retention type of mucoceles. (Ata-Ali et al., 2010) Other than that, if the fibrous wall of the mucocele is thick, then the removed tissue must be sent for histopathological examination to examine any salivary gland neoplasms. The micro marsupialization was considered as ideal and most commonly used treatment in case of pediatric patient because this technique was simple,

rapid and prognosis is good. (Ma et al., n.d.) The advantage in a CO₂ laser is that it minimizes the relapses and complications and allows rapid, simple mucocele ablation. It is also indicated for the patients who cannot tolerate long procedures.

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