

# MUCOCELE ON THE VENTRAL SURFACE OF TONGUE: A RARE CASE REPORT

## ABSTRACT

Mucoceleles represent one of the most common lesions of the oral cavity, developing as a result of saliva accumulation. The most frequent affected area is the lower lip, followed by floor of mouth, ventral tongue and buccal mucosa. Mucoceleles originating on the ventral surface of the tongue are less common (4.9%). In this report a mucocele developed on the dorsal tongue of a 17 year-old male is described. Additionally a review of previously published mucoceleles on the ventral surface of the tongue is provided and discussed.

**Keywords:** Mucocele, Blandin, Nuhn, Salivary gland.

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## INTRODUCTION

Mucoceleles are one of the most common benign soft tissue masses that occur in the oral cavity. Mucoceleles (muco – mucus and coele -cavity) by definition are cavities filled with mucus.<sup>1,2</sup> Allcystic lesions of the minor salivary glands, collectively and clinically referred to as mucoceleles, are described as either the extravasation type or the retention type. The term mucus extravasation phenomenon (or escape reaction) is used when mucus has been extruded into the connective tissue and is surrounded by a granulation tissue envelope. The term mucus retention cyst is used to describe a cyst with retained mucin, which is lined by ductal epithelium.<sup>3</sup>

## CASE REPORT

A 17 year old male reported with the chief complaint of swelling on the ventral surface of the tongue. Pt had difficulty in having food. The swelling was round tooval in shape with a central bluish discoloration, measuring approximately 3×2 cm indimension with no history of bleeding or any discharge from the swelling. There was no visible pulsation. On palpation, it was fluctuant and nontender [figure1]. Diascopy test was negative (figure 2). The patient had been aware of the swelling for approximately since 15 days but denied any episodic increase or reduction in size. Rest of the medical and dental history was non contributory. Based on the clinical examination and history, a provisional diagnosis of mucocele was made. On FNAC, thick mucinous fluid was obtained. Marsupialization was performed and the wound was closed with vicryl 4-0 sutures. The biopsy sample was immediately fixed in 10% formalin and sent for histologic evaluation. Microscopy demonstrated normal looking muscle tissue with single cystic area lined by macrophage. The pathologic report suggested extravasation type mucocele [Figure 3].

## DISCUSSION

Epidemiology: Mucoceleles represent prevalence of 2.4 cases per 1000 people. Mucoceleles appear with higher frequency in children than in

adults and are associated with traumatic injuries. Commonly seen on lower lip- lateral to midline and less common sites been anterior ventral tongue, buccal mucosa, palate and retromolar pad. Mucoceleles of the anterior lingual salivary glands (glands of Blandin and Nuhn) are relatively uncommon, this type of mucocele represents an estimated 2–8% of all mucoceleles. Out of the 400 cases of mucocele reviewed by Harrison only 9 cases were on the tongue. Joshi SR et al investigated the clinical and histopathologic features of 30 cases of mucocele of glands of Blandin-Nuhn. They concluded that all the lesions were located on the ventral surface of the tongue. These lesions were situated at the midline in 24 patients and laterally in 6 patients. They also found that there was a female predominance, and most patients were younger than 15 years. Histopathological examination showed extravasation type of mucocele with a prevalence of 1.4/1000 persons. In the present case series we reported 2 cases which were present on the ventral surface of the tongue and on the buccal mucosa.

## Classification

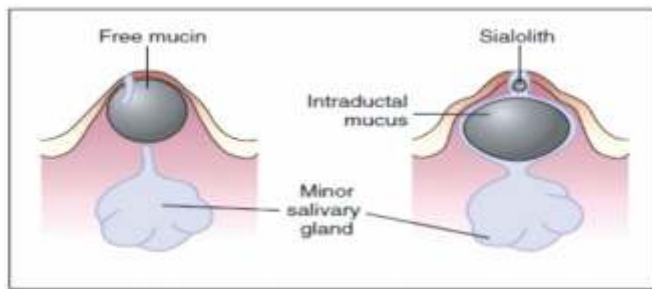
### Extravasation type:

The formation of an extravasation mucocele is the result of trauma to a minor salivary gland excretory duct or laceration of the duct results in the pooling of saliva in the adjacent sub mucosal tissue and consequent swelling. Although often termed a cyst, the extravasation mucocele does not have an epithelial cyst wall.

### Retention type:

The retention mucocele is caused by obstruction of a minor salivary gland duct by calculus or possibly by the contraction of scar tissue around an injured minor salivary gland duct. The blockage of salivary flow causes the accumulation of saliva and dilation of the gland / duct. These are the epithelium lined cysts arising from salivary gland tissue.

Mucous extravasation phenomenon showing free mucin in the submucosa and mucous retention cyst (right), showing mucin retrained



in the salivary excretory duct because of blockage by a sialolith.

## Etiopathogenesis

The origin of mucocele remains elusive. A hypothesis suggested that obliteration of the salivary gland ducts is the cause of mucocele. However, this hypothesis has weakened against the traumatic origin of the lesions. A case series implicated trauma and nibbling of fingers in 34% of the cases as the cause for mucocele. The typical location of these lesions is in the lower lip. These areas are more susceptible to accidental trauma or nibbling and suction habits. Presence of the lesion in young patients, and the rare presence of calculi in the minor salivary glands support this etiopathogenic theory. According to another hypothesis, mucoceles may develop as a result of a traumatic defect or severance of salivary duct and escape of saliva into the tissue. Therefore, Standish and Shafer expressed the opinion that rupture of an excretory duct allows for the escape of mucus into adjacent tissues, but they also considered the possibility of dilatation of a partially occluded duct. The presence or absence of epithelium in a mucous cyst (extravasation/retention) also appears to be related to the pathogenesis. Robinson L concluded that ductal dilatation occurs consequent to ductal obstruction. The dilated ducts may then fuse together to form an epithelium lined cystic cavity.

The human tongue contains three distinct sets of minorsalivary glands, namely, the glands of vonEbner, the glands of Weber, and the glands of Blandin and Nuhn. The glands of Blandin and Nuhn are mixed mucus and serous glands that are embedded within the musculature of the ventral surface of the anterior tongue. They are not lobulated or encapsulated.

Each gland is approximately 1–8 mm wide and 12–25mm deep and consists of several small independent glands. They drain by means of 5–6 small ducts that open near the lingual frenum. These glands extend laterally and posteriorly from the midline, forming a mass resembling a

horseshoe with its opening pointing towards the root of the tongue.

They have been postulated to be the result of trauma to the ventral surface of tongue that results in rupture of the draining ducts. The solitary, smooth, nodular submucosal lesions of the tongue can be clinically differentiated as schwannoma, neurofibroma, rhabdomyoma, lymphangioma, fibroma, lipoma, leiomyomas, inflammatory lesions such as fibroepithelial polyp, and benign salivary gland tumors and mucocele.

Mucoceles on the tongue are rare and occur almost exclusively on the ventral surface where the glands of Blandin and Nuhn are located. The mucocele is located directly under the mucosa (superficial mucocele), in the upper submucosa (classic mucocele), or in the lower corium (deep mucocele). The clinical presentation of these lesions depends upon their depth within the soft tissue and the degree of keratinization of the overlying mucosa; superficial lesions present as raised soft tissue swelling that is translucent and having bluish color, whereas the deeper lesions are more nodular, lack the vesicular appearance, and have a normal mucosal color<sup>1</sup>. Palpation can be helpful for a correct differential diagnosis. Lipomas and tumors of minor salivary glands present no fluctuation whereas cysts, mucoceles, abscess, and hemangiomas. Presence of mucoceles on the dorsal surface of the tongue is not yet reported. Regarding superficial mucoceles, trauma does not always appear to play an important role in pathogenesis. In many cases, mucosal inflammation that involves the minor gland duct results in blockage, dilatation, and rupture of the duct with sub epithelial spillage of fluid. Changes in minor salivary gland function and composition of the saliva may contribute to their development. Histologically, mucoceles are classified as retention and extravasation

types. Mucocele involving the glands of Blandin and Nuhn are often histologically diagnosed as being extravasation type. Mucoceles can easily traumatize and become a strong source of irritation and annoyance to the patient. These lesions are often asymptomatic, however, as they grow in size, they can cause discomfort, external swelling, and interfere with speech and mastication. Thus, surgical excision is the treatment of choice. Usually, the surgical excision includes the servicing mucous glands with evacuation of its contents. Healing without complication or recurrence should follow.

In small mucocele cases, they are completely excised with primary closure, with rapid and uneventful healing. On the other hand, larger lesions may also be managed by marsupialization, cryosurgery<sup>10</sup>, laser ablation, and micromarsupialization.

## CONCLUSION

In these case reports we describe the



Figure 1: Mucocele on the ventral surface on the tongue.



Figure 2: Diascopy test negative

mucoceles of the oral cavity which is located on the rare sites on the buccal mucosa and ventral surface of the tongue.

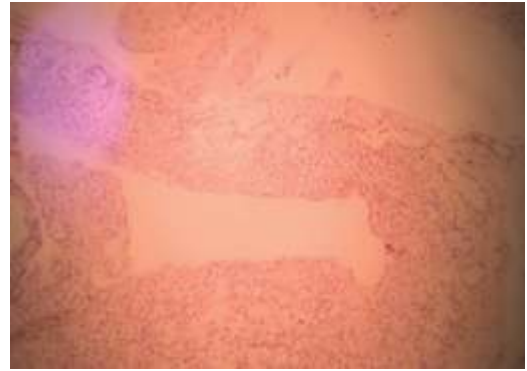


Fig 3: Histopathological picture

The histopathological picture showed fibrous connective tissue with foci of pooled mucin along with muciphages and neutrophils. Associated minor salivary gland acini and ducts were also seen.



INTRA OPERATIVE PHOTOGRAPH



POST OPERATIVE PHOTOGRAPH

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