

Mucocele on the ventral surface of the tongue and on the glands of Blandin–Nuhn: A case report

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Abstract

Mucocele is the cystic disease of the oral mucosa. Most commonly seen on the inner border of lower lip and sometimes known as mucoceles of Blandin and Nuhn when develops at the ventral surface of the tongue. They are rare benign lesions of salivary glands. Sometimes misdiagnosed and confused with ranula. The recommended standard treatment is a complete surgical excision of the gland involved.

Keywords

Mucocele, Salivary gland, Ranula, Tongue, Blandin & Nuhn glands

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Introduction :

Mucocele by definition is a cavity filled with mucin and mucous fluid.¹ It is a common lesion of the oral mucosa, which originates from the closure of a minor salivary gland duct and retention of mucus inside the gland lumen (retention type).² More often it has a traumatic origin, due to the rupture of a minor salivary gland duct and extravasation of the mucin into the surrounding soft tissues (extravasation type).³ All cystic lesions of the minor salivary glands, collectively and clinically referred as mucoceles, are described as either the extravasation type or the retention type. Mucoceles are known to arise more commonly on the lower labial mucosa. However, they can be found in any region where small salivary glands are present, such as the tongue, buccal mucosa, superior lip, and palate.⁴ Young patients seem to develop mucoceles more commonly than older patients.

Case Report:

A 5-year-old male child was reported with the chief complaint of swelling on the ventral surface of the tongue. The swelling was round-to-oval in shape with a bluish discoloration, measuring approximately 1 × 2 cm in dimension with no history of bleeding or any discharge from the swelling. There was no visible pulsation. On palpation, it was fluctuant and nontender [Figure 1], soft in consistency and freely mobile on all planes with firm attachment to ventral surface of tongue. Parents were aware of the swelling for approximately 2 months. Medical and dental history of the patient was non-contributory.

Based on the clinical examination and history, a provisional diagnosis of mucocele was made and a differential diagnosis of traumatic fibroma and lipoma was considered. Excisional biopsy was performed [Figure 2], and the wound was closed with sutures. [Figure 3], The biopsy sample was immediately fixed in 10% formalin and sent for histopathological evaluation and the report was suggestive of connective tissue stroma with extravasation of mucin with mucinous exudates devoid of demarcation and showed nonkeratinised stratified squamous epithelium with underlying connective tissue (Figure 4). The connective tissue consists of collagen fibres and a dilated salivary duct containing mucin and neutrophils. Extravasated mucin was seen in association with acute inflammatory infiltrate, blood vessels and extravasated RBC's suggestive of mucocele.

Mucoceles arising on the ventral surface of the tongue are known as mucocele of the glands of Blandin-Nuhn. These glands are a compact group of small mixed mucous and serous salivary glands, situated on both sides of the midline of ventral tongue surface, and are arranged in a mass with a horseshoe shape.

Post op review was done after 3 months (Figure -5)

Discussion:

The human tongue contains three distinct sets of minor salivary glands, namely, the glands of Von-Ebner, 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 12–25 mm 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.¹

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.²

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.¹ 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 do.^{1,3}

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 subepithelial 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. According to Surgerman *et al.* and Baurmash, the technique for managing moderate-to-large Blandin and Nuhn mucoceles is to completely unroof the lesion along its entire periphery to visualize and remove all of the glands. Healing without complication or recurrence should follow.^{1,7,4} 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,¹ cryosurgery,⁵ laser ablation,⁶ and micromarsupialization.¹

The glands of Blandin and Nuhn are not encapsulated and are directly overlapped by the muscle tissues; their manipulation tends to be different from other oral mucoceles; moreover, they cannot be removed in toto like other mucoceles. When only marsupialization is performed, the lesion has every chance of recurrence as soon as the draining site is repaired.⁷ To avoid recurrence, which is approximately 14%.⁸ We have removed the mucocele up to the muscle plane, including the small glands found in the surgical field. The follow-up was done until 6 months which showed no recurrence.



Fig-1: Pre op Ventral surface of tongue showing mucocele.



Fig-2: Fluid discharge during procedure



Fig-3: After sutures placement



Fig-4: Histopathology report showing confirmation of the mucocele retention cyst



Fig-5: Post OP follow up after 3 month

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