

Mucocele of the glands of Blandin–Nuhn

V Banu,¹ Sham Kishor Kanneppady,² R. L Anusha³

Abstract

Mucocele is a benign soft tissue mass resulting from the retention or extravasation of mucus in the surrounding tissues of the lamina propria. They are known to occur in varying locations on the oral mucosal surfaces overlying accessory minor salivary glands, most frequently located on the lower lip. Development of a mucocele in the ventral part of the tongue is rarely seen. This article reports a case of mucocele of the glands of Blandin and Nuhn.

Key words: Mucocele, Blandin–Nuhn glands.

Introduction

Mucocele is, by definition, a cavity filled with mucus.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.

Mucocele is 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 They exhibit nodular and/or vesico-bullous aspects. Initially they exhibit rapid growth, reaching varying sizes. The diameter of mucoceles ranges from a few millimeters to centimeters.⁵

Most commonly, they present a bluish color with a translucent aspect and a flabby consistency.² Many patients report periodic discharge of viscous fluid from the lesion.⁶

Young patients seem to develop mucoceles more commonly than older patients.

Case Report

A female patient aged 20-years was referred to our department with the chief complaint of a swelling on the

¹ V. Banu M.D.S.

Assistant Professor, Dept of oral medicine & Radiology, Century international institute of dental sciences & Research centre, Poinachi, Kasaragod, Kerala

² Sham Kishor Kanneppady M.D.S.

Reader, Dept of oral medicine & Radiology, Century international institute of dental sciences & Research centre, Poinachi, Kasaragod, Kerala

³ R. L. Anusha M.D.S.

Senior Lecturer, Dept of oral medicine & Radiology, Century international institute of dental sciences & Research centre, Poinachi, Kasaragod, Kerala

Corresponding Author

Dr. V. Banu

Tel: 09844802522, 09037890457, E mail: drbanuv@gmail.com



Figure 1: Intra-oral photograph of the patient exhibiting a solitary, well defined swelling on the ventral surface of the tongue.



Figure 2: Intra-oral photograph of the patient exhibiting pedunculated growth.



Figure 3: Excisional Biopsy.

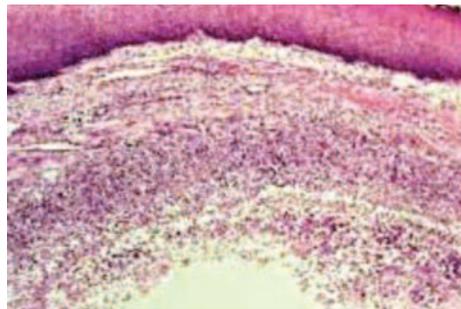


Figure 4: Photomicrograph of the lesion showing nonkeratinised stratified squamous epithelium with Extravasated mucin and neutrophils.

lower aspect of tongue which had been present for the past 7 months. The lesion was sudden in onset, gradually increased in size and, after 3 - 4 days from onset, ruptured with a watery discharge, following which it decreased in size. The patient gave a history of consecutive increases in size followed, after few days, by rupture with a watery discharge.

It was not associated with pain nor any other symptoms. The patient was unable to recall any history of trauma in the area.

On oral examination a solitary, pedunculated, well defined swelling was present on the ventral surface of the tongue along the lingual frenulum, 1cm posterior to the tip of the tongue (Figures 1, 2), roughly measuring about 1,0 x 0,5 cm in size. The growth surface shows white areas interspersed with erythematous ones. On palpation it was soft in consistency, freely mobile on all planes with firm attachment to ventral surface of tongue.

Based on history and clinical examination, a provisional diagnosis of mucocele was given and a differential diagnosis of traumatic fibroma and lipoma was considered. After

obtaining informed consent, an excisional biopsy (Figure 3) was performed and sent for histopathological examination. The soft tissue section 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.

Discussion

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. They are embedded in the muscles of the ventral aspect, and re-covered by a thin layer of mucosa.^{7, 8, 9} They are not lobulated or encapsulated. Each gland is approximately 1-8mm 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.⁹ The composition of saliva from the glands of Blandin and Nuhn is unknown.⁷

Mucoceles of the glands of Blandin- Nuhn are considered to be rare. In 1970 Heimansohn first reported a case of mucocele of Blandin and Nuhn in a 14-year old female (his daughter).¹⁰

Since that period more cases have been reported. Harrison reviewed 400 mucoceles and of these, only nine arose from the tongue salivary glands.⁴ According to Jinbu et al., Blandin–Nuhn mucoceles comprise 9.9% of all oral mucoceles studied by them.⁷ Nico et al reported 8.3% mucocele of the glands of Blandin-Nuhn among 36 pediatric patients.¹¹ De Camargo Moraes et al. stated that mucocele of the ventral tongue gland should not be considered rare: in their series, out of 312 cases of mucoceles 48 cases were diagnosed as mucocele of the glands of Blandin–Nuhn accounting for 15.4%, and was the second most frequent.¹² Hayashida et al., reported 9.83% on the ventral tongue out of the 173 cases studied.⁶

The incidence of mucoceles in these glands is higher in youth and females.¹³ Females are more affected than males by a ratio of 4:1.⁷ The age of the patients ranges from 5 years to 36 years with an average of 17 years. The duration between when the lesion was first noticed and the first presentation to the hospital ranged from 1 week to 2 years with an average of 3.6 months.¹⁰

Mucoceles of Blandin and Nuhn are usually asymptomatic and relatively small in size ranging from 2 mm in diameter to 20mm. Sometimes they can grow relatively large enough to cause feeding difficulties especially in babies¹⁴ or difficulty in speech and mastication.¹³ Mucocele of Blandin and Nuhn may be located anywhere on the ventral surface of the tongue. Jinbu et al.⁷ reported that 17 of the 26 cases (65.4%), lesions were located in the ventral tip of tongue, while 9 (34.6%) occurred midway between the tip and the root of tongue. They also noted that 19 cases (73%) were in the midline while 7 were lateral to this.

There are 2 types of Blandin– Nuhn mucoceles:

- one is characterized by a submucosal lesion covered with integral mucosa, characterized by a long-term development with no symptoms;
- the other one is more protuberant, frequently presents with a pedunculated base, and is characterized by painful sensibility and an history of local trauma.¹⁵ Abnormal ducts

or traumatic injury to this structure is the most likely etiologic factor leading to the development of these lesions⁸, probably favoured by the frequent oscillation of the tongue.¹⁵

Sugerman et al. stated that the mucoceles of the Blandin–Nuhn glands are clinically similar to vascular lesions, pyogenic granulomas, polyp, and squamous papiloma, depending on the vascularization degree and the atrophy of the acinus.⁸ Differential diagnosis with lymphangioma must be considered, too.⁶

Histopathological examination of the mucoceles of the glands of Blandin–Nuhn reported in the literature, revealed that they consist of mucus extravasation phenomenon with no epithelium lining the mucin collection. This feature is strongly related to the fact that the extravasation-type lesion is more common in young patients, and most patients diagnosed for mucocele of the glands of Blandin–Nuhn in the literature were under 40 years old.¹⁵ Special stains such as mucicarmine and Halcian blue, are helpful in identifying mucin that is present freely in tissues or in the foamy macrophages.³

Treatment

Small mucoceles are best treated by excision followed by careful dissection of the affected minor salivary gland.^{2, 15} Cryosurgery and laser ablation are useful too. Larger lesions may also be managed by marsupialization, and micro-marsupialization. In some cases, prior to surgery, the cystic cavity is filled with rubber impression material improving the visual access for surgical excision.² An alternative to surgery includes steroid injections.

During surgery the glands of Blandin and Nuhn, which are deep in the musculature, result in recurrence of the lesion. Careful clinical evaluation and preoperative awareness of the surgical anatomy of the glands of Blandin and Nuhn, may minimize the need for repeated surgical procedures.

Conclusion

Mucoceles of the glands of Blandin and Nuhn need to be considered in differential diagnosis of asymptomatic mass on ventral surface of tongue as they are clinically similar to vascular lesions, pyogenic granulomas, polyp, squamous papiloma and lymphangioma. Excision should always be followed by histopathological examination, to avoid misdiagnosis.

Conflict of Interest

The Authors declare that they have no conflict of interest.

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