



## Mucocele of the Glands of Blandin-Nuhn-An Uncommon Occurrence

### KEYWORDS

mucocele, extravasation, retention, minor salivary glands, glands of Blandin-Nuhn, tongue, ventral

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**ABSTRACT** *Mucoceles are soft tissue masses which are benign in nature resulting from the retention in the salivary duct or extravasation of mucus into the surrounding tissues of the lamina propria. They occur in varying locations on oral mucosa where accessory salivary glands are present, most frequently, located on the lower lip. Development of a mucocele on the ventral aspect of the tongue is rarely seen. This article presents a case of mucocele of the glands of Blandin and Nuhn in a 13 year old female patient.*

### Introduction:

By definition, a cavity filled with mucin is known as mucocele.<sup>1</sup> It is a common lesion of oral cavity which could be of retention type or extravasation type depending on whether the mucus accumulates within an obstructed salivary duct or in the surrounding soft tissue due to rupture of duct.<sup>2,3</sup> Collectively & clinically, all cystic lesions of the minor salivary glands are referred to as mucoceles of either type.<sup>4</sup>

Mucoceles can occur in any region where minor salivary glands are present, but are more commonly seen on the lower labial mucosa.<sup>5</sup> They can occur in any gender and at any age; most frequently seen in the second & third decade of life.<sup>6</sup> Mucoceles appear as small, discrete, translucent, soft & painless swelling on mucosa ranging from normal pink to deep blue in colour. The deep blue colour results because of tissue cyanosis, vascular congestion associated with stretched overlying tissue & translucency of the accumulated fluid beneath it.<sup>6</sup> Initially, they exhibit rapid growth, reaching varying sizes. The diameter vary from few millimeters to centimeters.<sup>7</sup> Many patients report periodic discharge of viscous fluid from the lesion.<sup>8</sup>

### Case Report:

A 13 year old female patient reported with chief complaint of swelling on the lower aspect of tongue since 1 month. The swelling was initially small in size and there was gradual & constant increase in size of swelling. Patient gave history of trauma in relation to that region. There was no complaint of pain associated with the swelling, no increase in size of the swelling during meal times & no pus or blood or watery discharge from the swelling. Past medical & dental history was non contributory. On intraoral examination, there was a solitary, well defined, sessile, painless oval swelling, measuring about 0.5 x 0.2 cm on the ventral surface of the tongue on right side, which was of normal colour. (Fig. 1) The swelling was fluctuant, soft in consistency, non-compressible, non-reducible, non-purulent & non-tender. Based on history & clinical ex-

amination, a provisional diagnosis of mucocele was given and the clinical differential diagnosis of traumatic fibroma, lipoma, extralingual pyogenic granuloma & granular cell tumor were considered. Complete hemogram was done & all parameters were within normal range. Excisional biopsy was performed and sent for histopathological examination. Hematoxylin & Eosin stained sections revealed epithelium & connective tissue stroma. Epithelium was stratified squamous & keratinized in nature. (Fig. 2) Connective tissue stroma showed mucous acini, areas of extravasated mucin pooling, chronic inflammatory cells, blood vessels and LS & TS of muscle. (Fig. 3) On the basis of clinical & histopathological findings, a final diagnosis of extravasated mucocele was rendered.

### Discussion:

The mucoceles which arise on the ventral aspect of the tongue are known as mucocele of the glands of Blandin – Nuhn. These salivary glands are a group of small mixed mucous & serous salivary glands which are situated on both sides of the midline of ventral aspect of tongue arranged as horseshoe shaped masses. These glands are present beneath the muscles of tongue on ventral aspect & covered by layer of mucosa.<sup>9,10,11</sup> They are not encapsulated or lobulated. Each gland measures about 1-8 mm wide, 12-25 mm deep and consists of several small independent glands. These glands drain by means of 5-6 small ducts which open near the lingual frenum.<sup>11</sup> The composition of salivary secretions from these glands are unknown.<sup>9</sup>

Mucoceles of the glands of Blandin – Nuhn are rare. The first case of mucocele of glands of Blandin – Nuhn was reported in 1970 by Heimansohn.<sup>12</sup> A review of 400 mucoceles revealed that only 9 arose from the salivary glands of the tongue.<sup>5</sup> Another study reported that mucoceles of the glands of Blandin – Nuhn comprised 9.9% of all the mucoceles studied by them.<sup>9</sup> Nico et al. found 8.3% of the mucoceles of glands of Blandin – Nuhn among 36 pediatric patients.<sup>13</sup> Another case series study of 312 cases found that 48 cases were diagnosed as mucoceles of the glands

of Blandin – Nuhn which accounted for 15.4%; which was second most frequent site in their study.<sup>14</sup> A study done on 173 cases reported 9.83% of mucoceles on the ventral aspect of tongue.<sup>8</sup>

The incidence of Blandin – Nuhn mucoceles are higher in youth<sup>9</sup> & in females by a ratio of 4:1.<sup>9,15</sup> The average age for the occurrence is 17 years, but can range from 5 to 36 years. The average duration between the lesion first noticed & the first presentation is 3.6 months, but can vary from 1 week to 2 years.<sup>12</sup> Blandin – Nuhn mucoceles are usually asymptomatic & relatively small in size which ranges from 2 mm to 20 mm in diameter.<sup>4</sup> These mucoceles are of two types: One is characterized by a submucosal lesion which is covered by integral mucosa, characterized by no symptoms & has long term development. The other one is more protuberant and presents with a pedunculated base & is often associated with pain & history of local trauma.<sup>16</sup> In the present case, a well defined swelling was present on the ventral aspect of tongue in a 13 year old female patient.

The most likely etiology for these lesions is abnormal ducts or traumatic injury to this structure.<sup>10</sup> The frequent oscillation of tongue also favours the development of this lesion.<sup>16</sup> Blandin – Nuhn mucoceles are similar clinically to vascular lesions, pyogenic granuloma, polyp & squamous papilloma depending on the degree of vascularization & the atrophy of the acinus.<sup>10</sup> On histopathological examination, a mucus extravasation phenomenon with no epithelium lining the mucin collection is seen.<sup>16</sup> Special stains such as mucicarmine & alcian blue help in identifying mucin which is present freely in tissues or in foamy macrophages.<sup>3</sup> As we could elicit history of trauma in the present case, the etiology could be attributed to this and the histopathological findings of extravasated mucocele ruled out other clinical differential diagnosis.

The mucoceles of small size are treated best by excision followed by careful dissection of the affected minor salivary gland.<sup>2,16</sup> Larger lesions are managed by marsupialization & micro-marsupialization.<sup>2</sup> Cryosurgery, laser ablation<sup>2</sup> & steroid injections are also useful and can be used as an alternative to surgery.<sup>4</sup> Surgical excision & follow up of 1 year in the present has been uneventful.

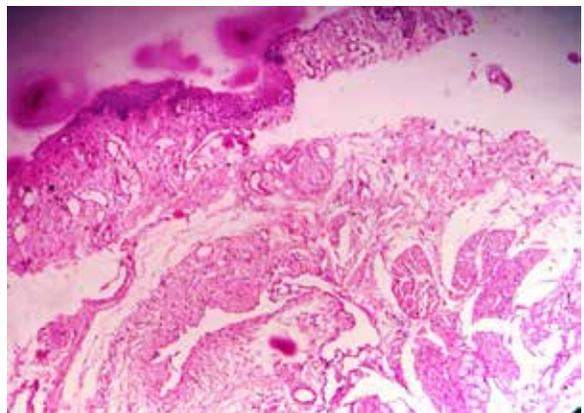
#### Conclusion:

Blandin – Nuhn mucoceles although uncommon, need to be considered in the differential diagnosis of asymptomatic masses present on the ventral aspect of the tongue, as they are clinically similar to vascular lesions, polyps, pyogenic granulomas, lymphangiomas & squamous papillomas. Excisional biopsy and histopathological examination will give a definitive diagnosis.

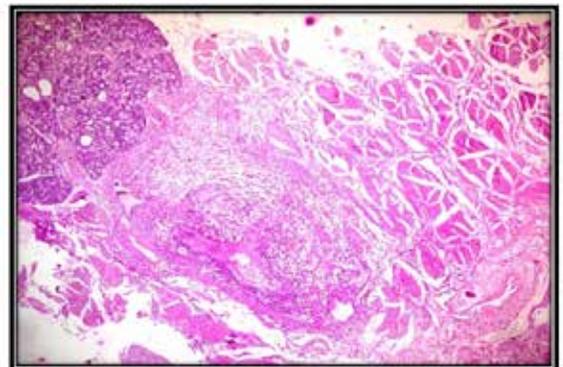
#### FIGURES:



**Fig. 1: Clinical photograph of the swelling on the right ventral surface of the tongue.**



**Fig. 2: H & E stained section showing epithelium & connective tissue stroma. (x100 Magnification)**



**Fig. 3: H & E stained section showing connective tissue stroma consisting of salivary acini, areas of mucous pooling, chronic inflammatory cells and LS & TS of muscles. (x100 Magnification)**

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