#### SHORT COMMUNICATION

# Mucocele of the gland of Blandin–Nuhn: histological and clinical findings

Paulo de Camargo Moraes • Marcelo Bönecker • Christiane Furuse • Luis Alexandre Thomaz • Rubens Gonçalves Teixeira • Vera Cavalcanti de Araújo

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Abstract The authors examined the clinical and histopathological features of 48 cases of mucocele of the glands of Blandin–Nuhn. Data of all patients with mucocele treated at the Department of Oral and Maxillofacial Surgery totaled 312 cases during the 6-year period of study were analyzed. There was no sex predominance, and most patients were younger than 20 years. All lesions were located on the ventral surface of the tongue, and they were more frequently observed at the tip of the tongue whereas few ones occurred more posteriorly. All lesions presented a polypoid appearance. Histopathologically, the mucoceles were of the extravasation type and trauma might be the most frequent etiological factor. This type of mucocele was the second most frequent one and should not be considered rare.

**Keywords** Mucocele · Gland · Tongue · Blandin–Nuhn · Oral Pathology

### Introduction

The human tongue contains three groups of minor salivary glands: the glands of Weber along the border of lateral tongue, the glands of von Ebner surrounding the circumvallated papillae, and glands of Blandin and Nuhn

M. Bönecker (⊠)
University of Sao Paulo,
Sao Paulo, Brazil
e-mail: bonecker@usp.br

embedded within the musculature of the anterior tongue ventrum [4, 12].

The gland of Blandin–Nuhn is a compact group of small, mixed mucous and serous salivary glands which is situated on both sides of the midline of ventral tongue surface. This gland is covered by a thin mucous membrane, and it is always present but often unrecognized. Five to seven ducts, each exiting from a lobe of the gland, open into the oral cavity just medial to the plica fimbriate, a fringed fold of mucous membrane on the under surface of the tongue recognized by its bilateral anterior and lateral relation to the lingual frenum [8].

As a consequence of saliva secretory retention cystic, swellings associated with these minor salivary glands might surface [1]. Generally, the mucoceles of the gland of Blandin–Nuhn appears as a soft oval fluctuant painless mass, and its usual superficial submucosal location gives it a translucent bluish appearance. Increased depth leaves the overlying mucosa with no obvious color change. Superficially placed, they lend their selves to complete excision [3, 8, 9].

The prevalence of mucocele in oral cavity varies according to its specific location and the most common one is the mucocele in the lower lip, even though mucocele of the glands of Blandin–Nuhn has been reported to be uncommon [2, 5, 8, 11] among oral mucoceles, its proportion wideranging from 9.6%, 9.9% to 10.3% [6, 7, 10].

The required treatment is the excision of the cystic mass that should include the immediate underlying contributing glandular tissue and its associated duct. Because the mucocele is thin-walled and close to the surface, sometimes, it tends to rupture easily, and if that happens, recurrence is frequent [3, 8].

Clinically, they might be presented as vascular lesions, pyogenic granuloma, polyps, or squamous papilloma, depending on their degree of vascularity and scarring [11].

<sup>P. de Camargo Moraes · C. Furuse · L. A. Thomaz ·
R. G. Teixeira · V. C. de Araújo
Dental Research Institute Sao Leopoldo Mandic,
Rua José Rocha Junqueira, 13,
code: 13045-755 Campinas, Brazil</sup> 

Because Dental Literature has very few papers on mucoceles of the glands of Blandin–Nuhn, and this pathology has not been fully described, we report clinic and histopathological findings of 48 cases.

# Methods

Three hundred and twelve cases of mucocele that were treated at the Department of Oral and Maxillofacial Surgery, Dental Research Institute Sao Leopoldo Mandic from 2001 to 2007 were clinically and histopathologically analyzed (hematoxilin and eosin stain) at the Laboratory of Oral Pathology at the same Dental Institute.

## Results

Considering the 312 cases of mucocele, the lower lip was the most frequent site of occurrence (230 cases, 73.7%) followed by the tongue (48 cases, 15.4%). All mucoceles of the tongue arose on the ventral surface and were diagnosed as mucocele of the glands of Blandin–Nuhn (Table 1). All patients initially visited a dentist who indicated them to make an appointment at the Department of Oral and Maxillofacial Surgery.

Of the 48 cases presented in this report, 20 patients were female and 28 patients were male. The age range was 5 to 49 years, with an average age of 15.3 years and a median age of 13.0. According to the data, 85.7% were leucoderma and 14.2% melanoderma (Table 2).

The duration from the time the lesion was first noticed to the patient's visit to Department of Oral and Maxillofacial Surgery varied from 2 weeks to 5 months, and the average was 1.8 months. Clinical features are described on Table 2.

#### Discussion

Even though some authors consider these mucoceles of Blandin–Nuhn unusual [2, 5, 8, 11], this study shows that this type of mucocele was the second most frequent one

Table 1 Frequency distribution of mucoceles location

Location	Number of cases	Percentage
Lower lip	230	73.7
Tongue	48	15.4
Floor of mouth	19	6.1
Buccal mucosa	10	3.2
Other	5	1.6
Total	312	100

 Table 2 Patients with mucocele of the glands of Blandin-Nuhn

Characteristics		Parameter (N)	Percentage (%)
Age	<10 years	14	28.6
-	10 to 19 years	22	46.9
	20 to 29 years	8	16.3
	30 to 39 years	2	4.0
	40 to 49 years	2	4.0
Skin color	Leucoderma	42	85.7
	Melanoderma	6	14.2
Type of mucocele	Extravasation	48	100
	Retention	0	0
Ventral tongue	Tip and midline	34	70.8
location	Between tip and root midline	12	25.2
	Between tip and root laterally	2	4.0
Clinical features	Polypoid	42	85.7
	Raised mass	6	14.2

(15.4%), and its prevalence was higher than the percentage range found in the literature [6, 7, 10].

The prevalence could be even higher once some might be misdiagnosed and a few others are not even diagnosed. This type of mucocele is thin-walled and close to the surface, which facilitates its rupture easily, and it might disappear spontaneously. Therefore, mucoceles of glands of Blandin–Nuhn should not be considered rare.

Most lesions occurred at the midline and were typically polypoid. Even though the clinical diagnosis of mucocele of the glands of Blandin–Nuhn may not be very difficult, Sugerman et al. [11] reported that these mucoceles may clinically resemble a vascular lesion, pyogenic granuloma, polyp, or squamous papilloma.

On histopathological examination, all lesions were diagnosed as extravasation type of mucocele which consists of extravasated mucus in connective tissue. The retention type that represents mucus retained by an epithelial lining was not observed. The walls of most specimens were composed of granulation tissue with no evidence of an epithelial lining.

The nature of the secretory products of these glands have not been precisely determined, but the glands have been histologically described as consisting of seromucous acini in their anterior portion and of mucuous acini capped by seromucous demilunes in their posterior portion [6].

In this study, patients were both male and female in equal proportions; most patients were younger than 20 years, and no patient was older than 50 years. The most common etiological factor of the reported cases of mucocele was the trauma to the tongue ventrum and its contained ductal structures. Depending on the trauma intensity, it might rupture the draining ducts that results in extravasation of secretions into the connective tissues. Extravasation mucoceles likely often arise as a result of local mechanical trauma such as biting or vigorous osculation [6]. In children, it has to be considered that central inferior incisors have a traumatic incisive sharp border.

*Conflict of Interest* The authors declare that they have no conflict of interest.

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