Mucocele of the lower lip in a 1-year-old child

Janaina Merli Aldrigui*1, Patrícia Eberson da Silva*2, Flávia Caló Aquino Xavier*3, Fábio Daumas Nunes*3, Sandra Kalil Bussadori*4 and Marcia Turolla Wanderley*1

*1 Departamento de Ortodontia e Odontopediatria, Faculdade de Odontologia, Universidade de São Paulo-USP, BRASIL
*2 Sindicato dos Odontologistas do Estado de São Paulo-SOESP, BRASIL
*3 Departamento de Estomatologia, Disciplina de Patologia Bucal, Faculdade de Odontologia, Universidade de São Paulo-USP, BRASIL
*4 Universidade Nove de Julho-UNINOVE, BRASIL

Abstract

Mucocele is a common oral mucosal lesion, but it is rarely observed in the infant. The aim of this study is to present the case report of a 1-year-old male patient with a mucocele of the lower lip, describing the clinical characteristics and surgical treatment performed under local anesthesia with no recurrence observed after nine months follow-up, and also to show the histological features of this benign oral lesion.

Introduction

Mucocele is a common benign lesion of the oral mucosa that etymologically means a cavity filled with mucus (muco means mucus and coele means cavity), which is the secretory product of salivary glands. The mechanisms for the development of these lesions are two, mucus extravasation, generally regarded as being of traumatic origin, and mucus retention, resulting from obstruction of the duct of a minor or accessory gland.1,2

The mucus extravasation phenomenon is usually formed secondary to rupture of an excretory duct of a salivary gland, which leads to an outpouring of saliva into the surrounding tissues.3 The resulting pool of glandular secretion is first surrounded by inflammatory cells and later by reactive granulation tissue consisting of fibroblasts. This granulation tissue reflects an immune response (i.e., to wall off the mucin). Although there is no epithelial lining surrounding the mucin, it becomes well encapsulated by this granulation tissue and is therefore categorized as a false cyst or pseudocyst4.

In contrast, a mucus retention phenomenon is a true cyst as it is lined with epithelium. This type of cyst appears to be caused by epithelial proliferation of a partially obstructed salivary duct, which becomes unable to adequately drain the produced saliva, leading to ductal dilatation and swelling.1 The mucus retention phenomenon was the second most common lesion from 5,457 biopsies of patients, 0–16 years of age, received over 15 years at the University of the Pacific School of Dentistry.5

The most common site of occurrence of mucocele is the lower lip6–10, the lesion has no sex predilection6,10 and all age groups are susceptible, with the peak frequency reported to be in the second and third decades.6–10 Although the lesion has no age predilection, it is rarely observed in infants11,12 and few cases were reported in the literature.12–14

Prognosis is favorable and several treatments have been proposed in the literature, such as excision of the lesion associated or not with removal of the gland involved12,13,15–17, marsupialization16,18,19, cryosurgery20, laser21 and micro-marsupialization.22 Rai et al. proposed a novel method by injecting an ultraflow rubber base impression material into a mucocele on the ventral surface of the tongue which showed a clear demarcated limit of the lesion making the surgical excision easier.

The purpose of this study is to report a case of...
a 1-year-old patient, with a mucocele of the lower lip and its surgical treatment.

**Case Report**

A one year and five months old male patient was referred to the Pediatric Clinical of the Dentists’ Syndicate of São Paulo State because of a “little ball” on the lower lip which was present since he had one year. Parents reported that they notice the “little ball” when brushing the baby’s teeth, and in the first moment they thought that was an ulcer, but as it didn’t regress they decided to seek a dentist. On the examination the lesion had a sessile base, flaccid consistency, clearly defined limits and a smooth surface. It was measuring about 5 mm and was rose-coloured translucent (Fig. 1).

After medical evaluation, and signed informed consent from the parents, the surgery was drifted. Due to the lack of baby’s contribution, considering his little age, and as the procedure was simple, we decided in favor of the physical containment with consent and aid of the parents: laying the baby on the chair, the mother lays over him holding the hands and the assistant holding the baby’s head. Under local anesthesia, the lesion was arrested by a rat tooth forceps and excised with a scalpel in the base close to the inferior lip. It was made homeostasis and suture (Figs. 2, 3).

The specimen was submitted to microscopic examination at the Oral Pathology Department of the University of São Paulo. Histological analysis

---

Fig. 1 Presence of mucocele of the lower lip in a one year and five months old male patient

Fig. 2 Surgical excision

Fig. 3 The suture

Fig. 4 Histopathologic appearance of mucocele: a lumen containing mucous pool, foamy macrophages and neutrophils in the periphery, surrounded by a rim of granulation tissue (HE, 200X).
of the lesion identified a large area of mucous material diffusely extravasated containing a great number of foamy macrophages and neutrophils floating into the background of eosinophilic amorphous material. Granulation tissue wall formation was found separating the mucous pool from the surrounding connective tissue (Fig. 4).

According to the clinical and histopathological findings the diagnosis was mucocele. Nine months after surgery, no abnormalities or recurrence were observed (Fig. 5).

**Discussion**

Although mucocele is a common lesion, few cases in children have been reported in the literature. Gatti et al.\(^{12}\) reported two cases of mucocele of the lower lip in newborn babies. Meechan and Blair\(^{24}\) reported a case of a 3-year-old child with bilateral lower lip mucoceles. Other authors demonstrated cases of mucoceles in newborn babies, but located in the floor of the mouth and ventral surface of the tongue\(^{9,13,14}\). We reported a case of mucocele centered in the lower lip of a 1-year-old male patient.

The major etiologic factor is related to trauma in the salivary duct\(^{6,8,9,12,13,17,22}\) that causes a mucous extravasation into the surrounding tissues (mucus extravasation phenomenon) or an obstruction of the excretory duct (mucus retention phenomenon). Standish and Shafer\(^{9}\) considered that birth trauma was the cause of congenital mucocele in their patients, who presented at or around the time of birth, but Crean and Connor\(^{13}\) and Gatti et al.\(^{12}\) although not to discard this possibility, suggest other factors as developmental problem of the excretory ductal, intrauterine finger suction, forceps usage and pediatric and nurse manipulation of the baby as possible etiologic factors.

Mucocele can be associated with other diseases such Sjögren Syndrome and cystic fibrosis\(^{25–28}\), a nontraumatic predisposition factors that might contribute to its development\(^{12}\). In the case presented here, the patient’s mother reported and we could observe that mucocele was imprisoned between the teeth, what can indicate that its appearance was through traumas in the mucosa during chewing.

Delbem et al.\(^{22}\) related the treatment of mucocele of lower lip in 14 patients ranged from 5–9 years by the micro-marsupialization technique. It was performed with a 4.0 silk suture passed through the internal part of the lesion along its widest diameter and a surgical knot was made. The suture was removed seven days later and it causes epithelization around the suture, establishing new excretory ducts and leading to the disappearance of the lesion. We do not use this technique because it has an index of questionable recurrence, cited in the study of 14% of the cases.

Gatti et al.\(^{12}\) related two cases of mucocele of lower lip in newborn babies treated with surgical excision under general anesthesia. Porter et al.\(^{29}\) related a case of a 4-year-old boy with multiple mucoceles of the lower lip that the surgical excision of the lesions was carried out under general anesthesia. Crean and Connor\(^{13}\) had also used general anesthesia for the removal of mucoceles located in the mouth floor in newborn babies. We decided to the total removal of the lesion under local anesthesia considering its small size and easy localization, short necessary chair time, beyond the contribution of the mother who contained the child. The surgery was performed by the four-hands-technique. Moreover, local anesthesia is cheaper than general anesthesia and offers a minor risk to the child.

Granulation tissue wall formation was found separating the mucous pool from the surrounding connective tissue in the histopathologic analysis. This condition identified the lesion as being a mucous extravasation phenomenon, that is the most common and have a tendency to occur in younger patients\(^{13,30}\). Although the causing gland did not appear in the histopathologic analysis, no recurrence was observed after nine months follow up.

Total excision of mucocele of lower lip in a child under local anesthesia is a simple procedure with a good prognosis when proper indicated.
References