



Retention mucocele on the lower lip associated with inadequate use of pacifier

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Abstract

Mucocele forms because of salivary gland mucous extravasation or retention and is usually related to trauma in the area of the lower lips. Ruptured ducts release the mucous that accumulates into adjacent tissues, leading to swelling. This report describes a large mucocele involving the lower lip, which was produced in a child by incorrect use of a pacifier. A few important concepts are discussed to help clinicians in the diagnosis and treatment of this pathology.

Introduction

The mucocele, a mucus accumulation from the salivary gland, is a common lesion of the oral cavity. The mechanisms for the development of these lesions are two, mucus extravasation and mucus retention [1, 2]. The clinical feature is a well-documented phenomenon involving the lip, cheek, tongue, palate, and floor of mouth; 44 percent to 79 percent of mucoceles occur on the lower lip. There is no gender predilection and it can arise at any age [3]. Although frequent in children and adolescents, no studies of mucocele in this specific population have been performed [7].

The primary cause of mucocele formation involves mucus extravasation from accessory salivary glands and is generally regarded as being of traumatic origin, particularly related to lip biting. Following this, there is an inflammatory reaction and reactive granulation tissue is formed. This granulation tissue is responsible for the encapsulation of mucin from the ruptured ducts; it is best classified as a pseudocyst.

The mucus retention cyst appears to be caused by epithelial proliferation of a partially obstructed salivary duct, which becomes unable to adequately drain the saliva produced, leading to ductal dilatation and swelling [4]. The disparate site and age incidences of extravasation and retention mucoceles suggest that these two types are not related and have a different pathogenesis [5].

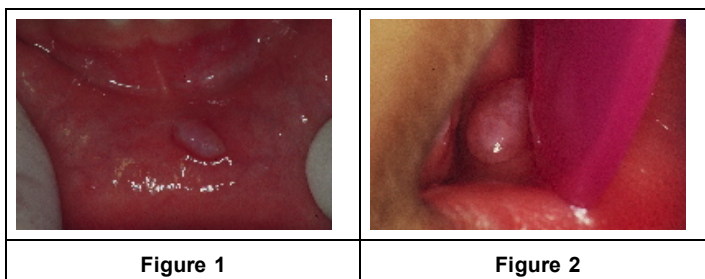
On clinical representation, the mucocele appears as an asymptomatic nodule with a pink or bluish color; the size may vary. The nodule often arises within a few days after minor trauma. Once produced, it may unchanged for months unless it is treated. If the content of the cyst is drained, it usually consists of thick, mucinous material. Some lesions regress and enlarge from time to time and may disappear after traumatic injury, which results in drainage [6].

Regardless of the etiology, appropriate treatment depends on identification of the salivary gland in which the lesion originates and on appropriate elimination of the source of secretions [8]. It is important to highlight that some habits, such as incorrect use of pacifiers or constant biting at the same place, might lead to these mucous extravasations or retentions.

Surgical excision of the pseudocyst and supplier gland has been the main treatment option. However, other options have been reported in the literature such as the creation of a pouch (marsupialisation), freezing (cryosurgery), micromarsupialisation, and CO₂ laser vaporization [4]. There are also some reports suggesting the use of corticosteroid injections as an alternative to surgery [9].

Our report presents the clinical and histopathologic findings of a lower lip mucocele linked to the incorrect use of a pacifier and reviews important clinical concepts to help in the correct diagnosis and treatment of this pathology.

Case report



A 4-year-old girl was brought to our clinic by her mother with the chief complaint of a recurrent "little ball" on the lower lip. Examination revealed that the child had the habit of using a pacifier in an incorrect position. On intraoral examination, clinical findings showed a localized, compressible, soft fluid-filled nodule of approximately 10 x 10 mm diameter (Figure 1) with a translucent to blue surface. In addition, a unilateral cross-bite on the right side was observed that related to incorrect pacifier use (Figure 2). No relevant medical or social data were related by the parents.

Excisional biopsy was performed under local anesthesia and the wound was sutured. The biopsy sample was immediately fixed in 10 percent formalin and sent for histological evaluation. The histological evaluation of the sections by light microscopy revealed the presence of mucous fragments lined by parakeratinized stratified pavementous epithelium, with signs of hyperplasia and hydropic degeneration. The presence of granulation tissue lining the mucus cavity surrounded by fibrous connective tissue was also observed. A mucus pool related to foamy cells was found within the lumen of the lesion. A very large vascular dilatation, edema, and signs of hemorrhage were observed in the sub epithelial area (Figures 4 and 5). Small salivary glands surrounded by smooth mononuclear inflammatory infiltration were also seen in one of the analyzed sections. The definitive diagnosis was mucus retention phenomenon (mucocele) on the lower lip associated with incorrect use of pacifier.



Figure 3

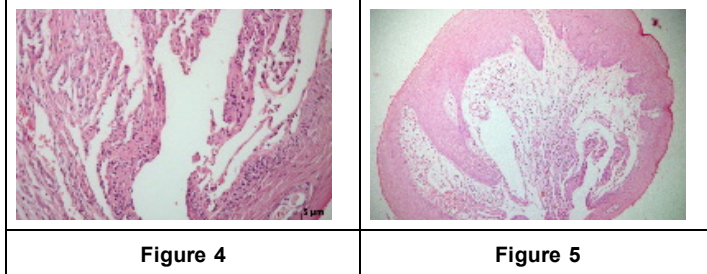


Figure 4

Figure 5

The patient was re-examined 30 days after the surgical procedure and there were no signs of recurrence (Figure 3).

Discussion

In the past, oral mucoceles were thought to arise from destruction of an excretory duct causing back pressure of mucus and the formation of an epithelial-lined cyst. It is now, however, generally accepted that the lesion is the result of trauma with injury or severance of an excretory duct and subsequent escape of mucus into the adjacent tissue [5]. Overall, mucous extravasation cysts and periapical pathology are the most commonly diagnosed lesions. The information provided during clinical analysis is sometimes sparse and occasionally neglected.

Ranula is another pathology, which is also included in the group of extravasation cysts (exophytic, fluid-filled and fluctuant nodules) [11]. It is usually fed by a collection of discrete minor salivary glands within the sublingual gland via a point of leakage within the wall of the ranula. It typically presents as a bluish swelling on the floor of the mouth that resembles a frog's abdomen, hence the term "ranula" [12].

In this study, the diagnosis was primarily based on clinical information adequate histological material. According to the literature, mucocele usually appears as a painless fluctuant swelling. Our patient did complain about pain, but only when the mucocele was in contact with the pacifier. Whether the lesion is an obstruction or extravasation, it is most important to identify and remove the source of trauma.

Incorrect use of pacifiers is common among children. During the tooth eruption period, the oral tissues become very sensitive and children try to relieve the eruptive symptoms by biting the pacifier with exaggerated force and sometimes in the wrong place, leading to the development of a wide spectrum of pathologies.

Because 90 percent of mucoceles are extravasation cysts without an epithelial lining, it is not imperative to remove the cyst; instead, it is necessary to remove the source of the mucus secretion [5]. Furthermore, complete excision of the mucocele may be problematic, but if the source of the secretions is not controlled, recurrences are to be anticipated.

The clinical diagnosis of mucocele is relatively easy considering the clinical appearance and location. Other oral nodules in the differential diagnosis described for children, especially for newborns include Epstein pearls, Bohn nodules, epidermoid cysts, and dermoid cysts [10].

In spite of the fact that experimental and clinical evidence supports trauma as the most probable cause of the mucocele, it is important to highlight that in some cases it might be associated with congenital lesions, Sjogren syndrome, and also cystic fibrosis. Overall it can be mentioned that it is possible that non-traumatic predisposing factors may also contribute to the development of this pathology.

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