

Oral Mucocele in a Paediatric Patient: A - Case Report with Mini Review of Literature

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Abstract

Mucocele is common lesion of oral mucosa. It is contemplated as an extraosseous, inflammatory nonodontogenic cysts. These cysts are associated with salivary glands and generally are of two types - extravasation cysts and retention cysts. Both the cysts are denoted by the term "Mucocele" in spite of having significant difference in etiopathogenesis and histopathologic features. They comprise 6-9% of salivary gland diseases. Through this article we present a case of mucocele in a paediatric patient.

Keywords: Mucocele; Salivary Gland; Oral Mucosa; Lip; Mucin

Introduction

Mucocele is a mucus-filled cavity that can appear in the oral cavity, appendix, gallbladder, paranasal sinuses or lacrimal sac. It occurs because of an alteration of minor salivary glands leading to localized swelling of oral mucosa at the site [1]. Clinically, mucoceles have variable clinical appearance because of their location in oral tissues. Based on their location, they can be termed as superficial mucocele or deep mucocele [2]. Similarly, histologically also they present in two types. Firstly, the extravasation mucocele resultant of salivary glandular duct rupture with mucin spillage into the surrounding peri-glandular soft tissue. Secondly, the retention mucocele which results from glandular duct obstruction leading to decreased or even absence of glandular secretions [3] (Figure 1).

The etiological factors for mucoceles are trauma and obstruction of salivary gland duct. Traumatic causes include ductal

Figure 1: Pathogenesis of Mucocele.

crush- type injury or severance of feeder duct, rupture of acinar structure due to hypertension and trauma that results in damage of glandular parenchymal cells [4]. Studies have revealed increased levels of tumor necrosis factor-alpha, type IV collagenase, matrix metalloproteins and plasminogen activators in extravasation mucocele which enhances accumulation of proteolytic enzymes contributing to invasive character of extravasated mucus [5,6].

Obstruction of salivary gland duct include congenital malformation, stenosis, periductal fibrosis, periductal scarring due to previous trauma, sialolith, excretory duct hypoplasia/agenesis or a tumor [7].

Mucoceles can appear at any site of the oral mucosa containing salivary gland. Only when located on the floor of the mouth the huge lesions are called ranulas because the swelling resembles the belly of a frog [8]. There is no clinical difference between extravasation and retention mucoceles. But superficial and deep mucoceles have variable presentation clinically. Superficial mucoceles are usually associated with minor salivary glands and are rarely larger than 1.5 cm in diameter. They present as single or multiple tense vesicles, with bluish, translucent cast, which often burst leaving a shallow, painful ulcer that heals within few days. The vesicular appearance is due to the superficial spillage of mucin, this also may lead to separation of epithelium from connective tissue. The pathologist must be aware of this lesion and should not mistake it microscopically for a vesiculobullous disorder [2]. Mucoceles found in deeper areas are usually larger. Deeper lesions also manifest as a swelling, but because of the thickness of the overlying tissue, the colour and the surface appearance are those of surface mucosa [9].

The differential diagnosis which can be considered are benign or malignant salivary gland neoplasms, hemangioma, lymphangioma, venous varix or venous lake, Lipoma, irritational fibroma, oral lymphoepithelial cyst, soft tissue abscess, and cysticercosis in oral cavity. Superficial mucoceles may be confused with cicatricial pemphigoid, bullous lichen planus and minor aphthous ulcers. The appearance of mucocele is pathognomonic, but history and clinical finding will lead to the diagnosis [3]. A simple technique called as fine needle aspiration biopsy (FNAB) can be very helpful, particularly when differential diagnosis of angiomatous lesions are involved. Abundant mucin without epithelial component as well as many inflammatory cells are found within mucoceles [10]. A histopathologic study is vital to confirm the diagnosis and to ensure that the affected glandular tissue is completely removed [8].

Despite numerous case reports of mucoceles, the case reports on paediatric patients are very rare. This article describes a mucocele developed on the lower lip of a child.

Case Report

A six-year-old girl child reported with a swelling on the lower lip to the Department of pedodontics at our institution. The solitary soft swelling started as a small pin point fluid filled vesicle after a trauma to her lips, and increased to 1x1 cm size in a week. The swelling had normal colour as that of adjacent mucosa (Figure 2). On palpation, it was fluctuating and non-tender. With this clinical history a provisional diagnosis of mucocele was made followed by a surgical excision of the lesion (Figure 3a and 3b). The excised tissue was sent for histopathological diagnosis for confirmation (Figure 4).

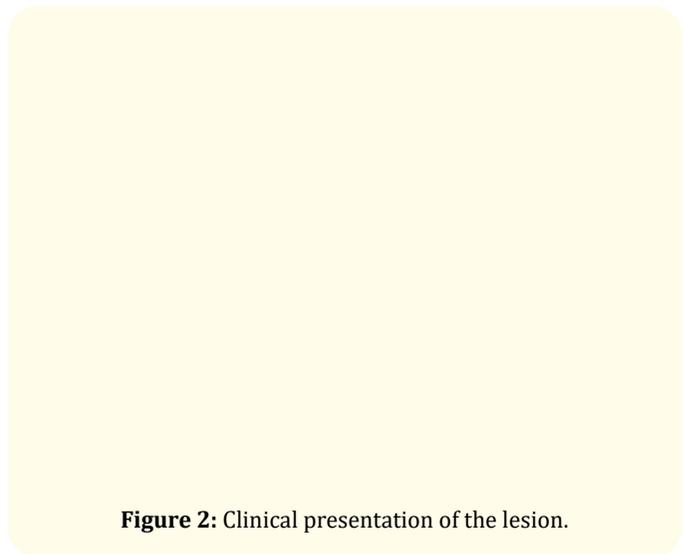


Figure 2: Clinical presentation of the lesion.

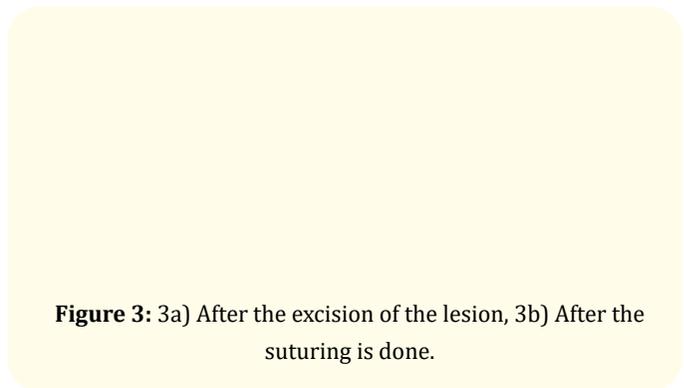


Figure 3: 3a) After the excision of the lesion, 3b) After the suturing is done.

Figure 4: Specimen sent to histopathology laboratory.

Histopathological examination of the soft tissue sections showed an overlying parakeratinised stratified squamous epithelium and underlying connective tissue. In the connective tissue, collection of mucin and inflammatory cells lined by severed ductal epithelium and deeper down mucous salivary acini were evident. Based on these features a confirmatory diagnosis of retention mucocele was made (Figure 5a and 5b).

Figure 5: 5a) Shows the epithelial lining (Red arrow) and collection of mucin (Black arrow), 5b) Shows the cluster of mucous salivary acini (yellow arrow).

Discussion

Mucoceleles are common oral lesions in children; about 11.6 - 21.8% of all paediatric oral biopsies showed mucoceleles. Many articles discuss mucoceleles in dental journals, but few of them focus

on children. The first study on mucoceleles in paediatric patients was published in Paediatric Dermatology in 2008 [11].

Mucoceleles are known by their common occurrence on the lower lip (81.9%), followed by the floor of the mouth (5.8%) and the ventral surface of the tongue (5.0%) [12]. The most common size is 1 cm (40%) followed by 0.5 cm (34.3%) [13]. It was reported that 75% of the lesions are <1 cm. Mucous extravasation cysts affect both genders in all age groups, but mean age was 11.8 ± 5.0 years [14].

Mucoceleles at times undergo spontaneous resolution and a subsequent accumulation of mucous. The lesions that do not undergo spontaneous resolution are those in which constant trauma persists. The spontaneous healing of a mucocele may be related to the degeneration of the adjacent acini because of the enzymatic action or the action of macrophages. This spontaneous resolution was not seen in our case, though there was no repeated trauma [11].

There are several methods for treating mucoceleles of the oral cavity. Excision with a scalpel or electrosurgery was used conventionally [15]. Cryosurgery is an alternative nonsurgical method. CO₂ laser is a relatively new method used in the treatment of mucoceleles. Excision with CO₂ laser method does not require suturing of the wound because there is less bleeding, and thus saves time and seems remarkably suitable for children [11].

Conclusion

Mucocele is the most common benign self-limiting condition. Children and young adults are most commonly affected. In greater part of cases, lower lips are commonly affected and trauma being the most common cause of this lesion. Most often it can be diagnosed clinically however sometimes biopsy is required to rule out the considered differential diagnosis. Different treatment options are available but CO₂ laser treatment is more beneficial with less chances of recurrence.

Conflicts of Interest

Nil.

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