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ORAL MUCOCELE IN CHILDREN AND ADOLESCENTS IN PEDIATRIC PATIENTS: A CLINICO-PATHOLOGICAL STUDY

Dental Science

Dr Shridhar Shetty Reader, Department of Pedodontics & Preventive Dentistry, Yogita Dental College & Hospital, Khed, Ratnagiri, Maharashtra, India.

Dr. Upendra Talathi Reader, Department of General surgery, Yogita Dental College & Hospital, Khed, Ratnagiri, Maharashtra, India.

Dr. Shitalkumar G Sagari Reader, Reader, Department of Oral Pathology & Microbiology, Yogita Dental College & Hospital, Khed, Ratnagiri, Maharashtra, India. - Corresponding Author

ABSTRACT

Background: Oral mucocele is the most common benign minor salivary gland lesion, caused due to mechanical trauma to the excretory duct of the gland. Clinically they are characterized by single or multiple, soft, fluctuant nodule, ranging from the normal color of the oral mucosa to deep blue. They are classified as extravasation or retention type.

Objectives: To analyze the retrospective data from 2013 to 2016, clinically and histopathologically diagnosed oral Mucocele for age, gender, type, site, color, cause, symptoms and dimension.

Results: Oral mucoceles were highly prevalent in the age group of 8 to 15 years. The extravasation type (90.9%) was more common than the retention type (9.1%). The most common affected site was lower lip (75.8%) followed by floor of mouth (9.1%). The maximum numbers of mucoceles were painless swelling (74.8%). The causative factors of the lesion in our study were lip biting (12.1%) and trauma (9.1%).

Conclusion: Oral Mucoceles are encountered in daily basis by clinicians, mainly affecting young people and lower lip and the extravasation type being the most common.

KEYWORDS:

Extravasation, Mucocele, pseudocyst, ranula, retention,

Introduction:

Mucocele is a most common type of salivary and soft-tissue cyst of minor salivary glands of lower lip typically appear as a fluctuant, bluish, nontender, submucosal swelling with a normal overlying mucosa1,2. Although minor salivary glands are found in most parts of the oral cavity except the gingiva, mucoceles occur most commonly in the lower lip, probably due to the higher incidence of mechanical trauma in this region.2 The OMs located on the floor of mouth are termed as 'ranula', which usually arises in the body of the sublingual gland and occasionally in the ducts of Rivini or in the Wharton's duct3. Ranulas are considered a variant of mucoceles and the name is derived from the typical swelling that resembles the air sacs of the frog - 'rana tigrina'.

Children are most commonly affected with equal gender predilection and with a clinical history of a painless swelling, often recurrent in nature that may be present for months or even years before the patient seeks treatment.[1,4]

Mucoceles of the minor salivary glands are rarely larger than 1.5 cm and are always superficially positioned. In contrast, the lesions arising from deeper areas such as the floor of the mouth is considerably larger creating, problems such as discomfort; interference with speech, mastication, and swallowing.[5]

The lesions are classified histologically as mucus extravasation and mucus retention phenomenon, depending on the presence of epithelial lining in the microscopic analysis. Different techniques have been described for the treatment for mucoceles,6 but most of them mentioned about surgical excision.7,8 Therefore, The purpose of this study was to analyze the data of oral mucocele with highlighting on clinical and histopathological features and to review the current literature briefly.

Material and methods

The hospital-based retrospective study was conducted by assessing the clinical records from January 2013 to January 2016 available in the archives of the hospital of histopathologically diagnosed 33 cases of oral mucoceles. The permission to undertake this study was obtained from the hospital Ethics Committee. The descriptive data of these patients were evaluated and compared with previously documented data in the literature. The study variables included age, gender, type, site, color, etiology, symptoms and diameter of the lesion. The results were analyzed by using Statistical Package for the Social Sciences (SPSS) version 13.0.

Results

In this study, we observed that the number of patients affected with OMs were between 8 and 15 years with the mean age of 11.18 years. Out of total 33 patients, 30 (90.9%) patients had extravasation type, whereas 3 (9.1%) patients had retention type of mucocele. The sites affected with OMs were lower lip (75.8%), buccal mucosa (6.01%), floor of mouth (9.01%), and soft palate (6.01%) and the least affected site is tongue dorsal surface (3.0%) (Table 1).

In this study, 25 (75.8%) patients were asymptomatic, 8 (24.2%) patients had discomfort and 05 (15.2%) patients experienced pain (Graph 1). It was also observed that the color of overlying mucosa of mucocele in 24 (72.7%) patients had normal color i.e. pink, 3 (9.1%) patients had pinkish red color and 6 (18.2%) patients had bluish color (Table 2).

In the present study we observed that the diameter of OMs measured between 3 mm and 16 mm. We viewed that the causative factors for the OMs were lip biting (12.1%), trauma (3.0%) and numerous lesions (78.8%) were not having any habit or causative factor (Table 3). The lower lip was the most commonly affected site by extravasation type (90.9%), and floor of mouth was the most commonly affected site by retention type (9.1%) of OM (Table 4).

Discussion

Mucoceles are a fairly common oral pathological condition in children, although not associated with significant morbidity; they can be the cause of discomfort, especially in the pediatric population. Mucoceles are classified as mucus extravasation phenomenon and mucus retention. Extravasation mucoceles are caused by a leaking of fluid from surrounding tissue ducts or acini, which is commonly seen in minor salivary glands due to trauma. [1,2,4,5]

Bagan et al9 proposed three evolutionary phases for extravasation mucocele. In the first phase, mucous spills diffusely from the excretory duct into conjunctive tissues where some leucocytes and histiocytes are found. Granulomas appear during the resorption phase due to histocytes, macrophages and giant multinucleated cells associated with a foreign body reaction. In the final phase connective cells form a pseudo-capsule without epithelium around the mucosa.9 Retention mucoceles are formed by dilation of the duct secondary to its obstruction or caused by a sialolith or dense mucosa. The majority of

retention cysts develop in the ducts of the major salivary glands.[10]

Oral mucoceles are believed to affect patients of all ages, with the highest incidence in the second decade of life. Teenagers and children are most commonly affected by mucoceles11. Menta et al3. Yamasoba et al12 and Oliveira et al13 reported that more than 65% of their patients with OMs were less than 20 years of age, Our results were similar to these findings.

Oral mucoceles occur in varying locations on the oral mucosal surfaces overlying accessory minor salivary glands. However, they occur more frequently in certain locations. Lower lip is most commonly affected by mucoceles14. Ranula designates mucoceles located on the floor of the mouth15. Our results matched the findings about occurrence of lesion at lower lip and other oral sites.

The color of mucoceles ranged from bluish to the normal pink color of oral mucosa15. The bluish color is due to cyanosis, vascular congestion associated with the stretched overlying tissue and the translucency of the accumulated fluid beneath. The variation in color depends on the size of the lesion, its proximity to the mucosal surface and the elasticity of the overlying tissue16,17. The OMs of this study were similar to the findings of Jani et al16 and Paulo et al1.

Trauma and obstruction of salivary gland ducts are considered essential factors for etiology of oral mucocele. Majority of our cases are of unknown etiology though lip biting and trauma history was recorded in few cases, which were similar to Flaitz et al18, López et al19 and Selim et al[20].

Histologically these lesion ranged from acute inflammation intermixing with the mucus collection with scarce amounts of mucus and connective tissue fibrosis. The lesions showed hyperplastic parakeratinized stratified squamous epithelium to atrophic epithelium, adjacent connective tissue showed small cystic spaces containing mucinophages, and areas of spilled mucin surrounded by a granulation tissue, few minor salivary gland tissue is also seen near to these cystic spaces.

Although diagnosis is mainly clinical, most of the cases show pathognomonic features thorough history should be taken to rule out etiologic factors. For few cases, the diagnosis may require routine radiographs, ultrasonography or advanced diagnostic methods like computed tomography (CT) and magnetic resonance imaging (MRI) for better picturing the form, diameter, position and determination of the lesion origin. Differential diagnosis includes lipoma, oral hemangioma, oral lymphangioma, salivary gland tumors, irritational fibroma, gingival cysts, and pyogenic granulomas14. The treatment should be either complete excision, marsupialization, dissection, cryosurgery, carbon dioxide lasers & electro-cautery, however in the present study all the lesions were excised surgically under local anesthesia.

Conclusion

Clinical knowledge of oral mucoceles, as well as the diagnostic factors related to the etiopathogenesis of these lesions is necessary for the correct diagnosis because these lesions mimic with minor salivary gland neoplasms, gingival cysts, and other benign soft tissue tumors which can cause diagnostic and therapeutic challenge to the clinician.

TABLES, GRAPH & LEGENDS

Table 1: Frequency for location of Oral Mucocele

Site	Frequency	Percent
Lower lip	25	75.8
Floor of the mouth	3	9.1
Soft palate	2	6.1
Buccal mucosa	2	6.1
Tongue	1	3.0

Table 2: Distribution according to color of lesion

Color	Frequency	Percent
Blue	6	18.2
Pink	24	72.7
Pinkish red	3	9.1

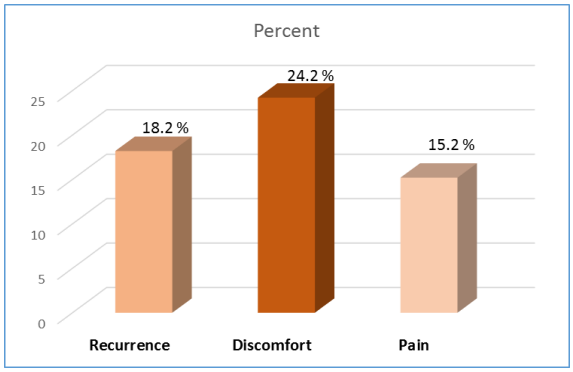
Table 3: Frequency of habit associated with Oral Mucocele

Habit	Frequency	Percent
Unknown etiology	26	78.8
Trauma	3	9.1
Lip biting	4	12.1

Table 4: Distribution of type of Oral Mucocele

Type	Frequency	Percent
Extravasation	30	90.9
Retention	3	9.1

Graph 1: Other symptoms associated with oral Mucocele



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