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CASE REPORT

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## MANAGEMENT OF ORAL MUCOCELE: A CASE REPORT

\*<sup>1</sup>Dr. Divya Agarwal, <sup>2</sup>Dr. Vinayakumar Kulkarni, <sup>3</sup>Dr. Jyothi B. and <sup>4</sup>Dr. Sonal Gaikwad

<sup>1</sup>Post Graduate Student, Department of Paediatric and Preventive Dentistry, SMBT Dental College, Sangamner, Ahmednagar, Maharashtra, India

<sup>2</sup>Professor and HOD, Department of Paediatric and Preventive Dentistry, SMBT Dental College, Sangamner, Ahmednagar, Maharashtra, India

<sup>3</sup>Reader, Department of Paediatric and Preventive Dentistry, SMBT dental College, Sangamner, Ahmednagar, Maharashtra, India

<sup>4</sup>Director At Dr. Lokhande's Multispeciality Dental Clinic, Aurangabad, Maharashtra, India

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### ABSTRACT

The Mucocele or Mucus retention phenomenon is a salivary gland lesion of traumatic origin, formed when the main duct of a minor salivary gland is torn with subsequent extravasation of the mucus into the fibrous connective tissue so that a cyst like cavity is produced. The wall of this cavity is formed by compressed bundles of collagen fibrils and it is filled with mucin. Mucoceles are generally characterized by swollen nodular lesions preferentially located on the lower lip and differ from the so-called ranulas, which are lesions located on the floor of the mouth and related to the sublingual or sub mandibular glands. The common sites are on the mucosal aspect of the lower lip, particularly in patients with a deep overbite and lip bite habit, and in the buccal mucosa posteriorly where an upper wisdom tooth is erupting buccally. Typically the patient presents with a history of recurrent swelling that develops over days or weeks, ruptures and then recurs after a few weeks. They may have a soft consistency, bluish, and transparent cystic swelling. The treatment of choice is surgical removal of the mucocele. Diagnosis is mainly clinical due to its pathognomonic presentation. We report a case of mucocele in child treated by conventional surgical excision.

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### INTRODUCTION

Mucocele includes mucus extravasation phenomenon and mucus retention cyst (Chi *et al.*, 2011). Extravasation mucocele results from a broken salivary gland duct and retention mucocele results from dilation of the duct secondary to obstruction or a local trauma (Baurmash, 2003). Retention mucocele is more common than extravasation mucocele (95% vs. 5%) (Bagán Sebastián, 1990). Some mucoceles get ruptured and healed by themselves, but in many cases local surgical excision is necessary. Mucocele is seventeenth most common salivary gland lesion in the oral cavity (Laller, 2014). Two types of mucocele can appear in the oral cavity, namely, extravasation and retention type. In children, extravasation mucoceles are common and retention type of mucoceles are very rarely found (Bodner, 2015).

\*Corresponding author: Dr. Divya Agarwal

Post Graduate Student, Department of Paediatric and Preventive Dentistry, SMBT Dental College, Sangamner, Ahmednagar, Maharashtra, India

Extravasation mucocele results from a broken salivary gland duct causing spillage into the soft tissues around the gland. These extravasation mucoceles undergo three evolutionary phases. In the first phase, mucus spills diffusely from the excretory duct into the connective tissues. In the next phase, i.e., resorption phase, because of foreign body reaction, formation of granuloma occurs. In the final phase, there is formation of pseudocapsule (without epithelial lining) around the mucosa (Ata-Ali, 2010). Blockage of the salivary gland ducts causing decrease or absence of glandular secretion causes retention mucocele (Singh, 2012). Clinical appearance of both extravasation and retention mucoceles is similar. Mucoceles present as bluish, soft, and transparent cystic swelling that frequently resolve spontaneously. Blue color is due to vascular congestion, cyanosis of the tissue above, and accumulation of fluid below. However, coloration may vary depending on the size of the lesion, proximity to the surface, and elasticity of overlying tissue.

Extravasation mucoceles appear frequently on the lower lip followed by the tongue, buccal mucosa, and palate and are rarely found in the retromolar region and posterior dorsal area of tongue; in contrast, retention mucoceles appear at any site in the oral cavity (Ata-Ali, 2010). When located on the floor of the mouth, these lesions are called ranulas because the inflammation resembles the cheek of a frog (Madan, 2012). Mucoceles are usually asymptomatic but sometimes can cause discomfort by interfering with speech, chewing, or swallowing. Treatment options include surgical excision, marsupialization, micromarsupialization, cryosurgery, laser vaporization, and laser excision (Mc Donald, 2004). This article describes a case report of mucocele on lower lip treated by surgical excision method using scalpel blade.

### Case Report

A 12-year-old girl reported to the department of pedodontics and preventive dentistry with the chief complaint of painless swelling on the right side of the lower lip since 10 months. Swelling was small initially and then was increasing gradually to attain the present size. There was no significant medical history. Patient revealed the history of root canal treatment of maxillary left first molar one year ago. On intraoral examination, a round, solitary, fluctuant swelling was seen on the right side of the lower lip at the right canine region. Swelling was approximately 7–8 mm in size below. Color of the swelling was the same as that of the adjacent mucosa (Figure 1). No other oral anomalies were detected. Patient had a positive history of lip biting habit.



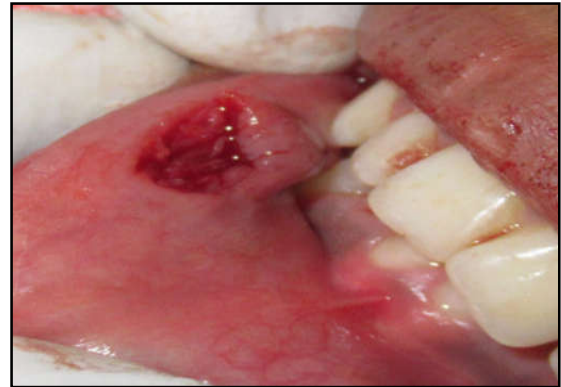
**Fig. 1. Preoperative View**



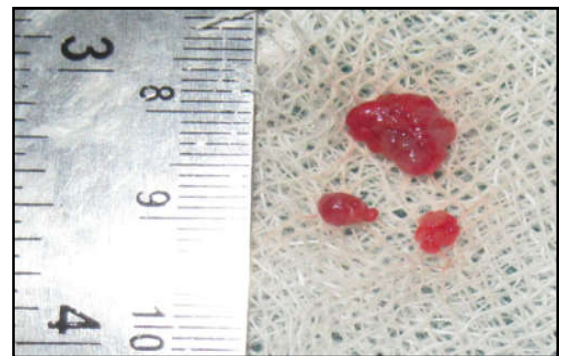
**Fig. 2. Intraoperative View**

There was no difficulty in speaking or chewing. The lesion was diagnosed as a mucocele based on the clinical features and history of lip biting habit. Routine hematological investigations were carried out which revealed all blood cell counts within normal limits. The treatment plan was explained, an informed consent was obtained from parents. It was treated under local anesthesia using scalpel by placing an

incision circumferentially (Figure 2). Lesion was resected from the base (Figure 3) and sent for histological analysis (Figure 4).



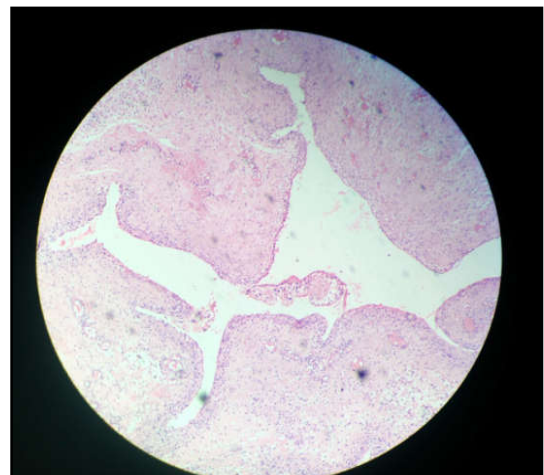
**Fig. 3. Postoperative View**



**Fig. 4. Biopsy specimen**



**Fig. 5. After the suture Placement**



**Fig. 6. Histopathological View**





**Fig. 7. Follow up after 7 days**

Intermittent sutures were placed (Figure 5), and suture removal was done after 1 week. Histopathological report confirmed the diagnosis as mucocele (Figures 6). Follow up was done (Figure 7) after 7 days which shows complete healing of the surgical site.

## DISCUSSION

Mucoceles may be located either as a fluid filled vesicle or blister in the superficial mucosa or as a fluctuant nodule deep within the connective tissue. Spontaneous drainage of the inspissated mucin especially in superficial lesions followed by subsequent recurrence may occur. The surface of long standing lesions may show fibrosis<sup>9</sup>. The development of Mucoceles usually depends on the disruption of the flow of saliva from the secretory apparatus of the salivary glands. The lesions are most often associated with mucus extravasation into the adjacent soft tissues caused by a traumatic ductal insult, which may include a crush-type injury and severance of the excretory duct of the minor salivary gland. The disruption of the excretory duct results in extravasation of mucus from the gland into the surrounding soft tissue. It has been suggested that the rupture of an acinar structure caused by hypertension from the ductal obstruction is another possible mechanism for the development of such lesions. Mucoceles are painless, asymptomatic swellings that have a relatively rapid onset and fluctuate in size. The patient may relate a history of recent or past trauma to the mouth or face, or the patient may have a habit of biting the lip. When lesions occur on the anterior ventral surface of the tongue, tongue thrusting may be the aggravating habit, in addition to trauma. Patients with superficial Mucoceles usually report small fluid filled vesicles on the soft palate, the retromolar pad, the posterior buccal mucosa, and, occasionally, the lower labial mucosa. These vesicles rupture spontaneously and leave an ulcerated mucosal surface that heals within a few days.

The various differential diagnosis are Blandin and Nuhn mucocele, Ranula, Benign or malignant salivary gland neoplasms, Oral Hemangioma, Oral Lymphangioma, Venous varix or venous lake, Lipoma, Soft irritation fibroma, Oral lymphoepithelial cyst, Gingival cyst in adults, Soft tissue abscess, Cysticercosis (parasitic infection) Superficial mucoceles may be confused with Cicatricial pemphigoid, Bullous lichen planus and Minor aphthous ulcers. The history and clinical findings lead to the diagnosis of a Superficial Mucocele. Radiographic evaluation is considered if sialoliths are considered a contributing factor in the formation of oral and cervical ranulas. The demonstration of the mucus retention phenomenon and inflammatory cells can be done by the fine needle aspiration. High Amylase and protein content can be

revealed by the chemical analysis. The localization and determination of the origin of the lesion can be done by Computed tomography scanning and magnetic resonance Imaging (Anastassov, 2000 and Axell, 1976). Surgical excision with removal of the involved accessory salivary gland has been suggested as the treatment. Marsupialization will only result in reoccurrence. Large lesions are best treated with an unroofing procedure (marsupialization). Large lesions may be marsupialized to prevent significant loss of tissue or to decrease the risk for significantly traumatizing the labial branch of the mental nerve. If the fibrous wall is thick, moderate-sized lesions may be treated by dissection. If this surgical approach is used, the adjacent minor salivary glands must be removed. Care has to be taken to avoid the injury to any marginal glands and ducts; it may lead to reoccurrence of the lesion. The excised tissue should always be submitted to the pathological investigations to confirm the diagnosis and rule out the salivary gland tumors. Laser ablation, cryosurgery, and electrocautery are approaches that have also been used for the treatment of the conventional mucocele with variable success (Delbem, 2000 and Sugerma, 2000).

## Conclusion

Mucocele are one of the most common soft tissue lesions of the oral cavity which are mainly benign and self-limiting in nature, easily diagnosed based on clinical appearance and accurate history. Trauma is the most common cause and majority of these lesions are seen in the lower lips. Because of high chances of recurrence, management of mucocele is a challenging task. However, surgical excision with dissection of surrounding and contributing minor salivary gland acini proved to be successful with least recurrence. As mucocele is painless, dentists are the one who notice these types of lesions and diagnose.

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