

## Conventional Surgical Excision of Lower Lip Mucocele in Children

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### ABSTRACT

**Introduction:** Mucoceles, as a mucus escape reaction or mucus extravasation phenomenon, are prevalent benign abnormality affecting the salivary glands. Most commonly occur in the lower lip in children and young adults. It emerges in response to trauma and obstruction of salivary gland ducts. Mucoceles are typically painless but can be troublesome for individuals while eating and speaking. **Case report:** An 8-year-old boy reported a lower lip mucocele due to their habit of lip biting. The lesion has been treated with a conventional surgical excision under local anesthesia and followed up after one week. The results showed that the mucocele lesion healed, no remnant was seen, and there was no complaint from the patient. **Discussion:** Oral mucoceles in the lower lip occur in children due to mucosa trauma or lip biting. For the patient reported here, conventional surgical excision using a scalpel was the treatment option due to the small size and superficial form of the lesion, so excisions can be done more easily with minimal postoperative wounds. **Conclusion:** Conventional surgical excision guarantees the removal of a whole small superficial mucocele lesion. Moreover, identifying the underlying cause of oral mucocele is crucial for patient education, enabling them to comprehend their condition and take measures to prevent its recurrence.

**Keywords:** Mucocele; oral lesion; children; surgical excision; human & health

### INTRODUCTION

The word mucocele originates from the Latin term "mucus," referring to a viscoelastic gel that lines the mucosal surfaces regulated to ensure efficient transport, and "cocele," indicating a cavity. Oral mucocele involves the accumulation of mucus within small salivary glands, leading to benign cystic lesions that may develop in children and adults [1]. The occurrence of oral mucocele in the lower lip is the most common place identified in 47% of the studies due to local trauma and lip-biting. Buccal mucosa, soft palate, and the retromolar trigone region are the subsequent predilection of oral mucocele [2,3].

Mucoceles typically appear as delicate, translucent cystic swellings with a bluish hue, often resolving quickly. The blue color results from vascular obstruction and tissue cyanosis, with fluid accumulation underneath. The hue may vary based on factors such as lesion size, surface proximity, and tissue elasticity, it is painless but may inconvenience patients during eating and speaking (3,4). There are two types of mucoceles which are extravasation mucocele and retention mucocele. These are considered distinct from one another due to their unique pathogenesis and microscopic characteristics [5].

The majority of mucocele lesions tend to be brief, rupture, and heal on their own. However, some persist over time, requiring surgical removal. Completely excising both the lesion and the affected gland locally is the preferred treatment to prevent recurrence [6]. The objective of this study was to present a clinical case involving the complete surgical removal of a mucocele in a child.

### CASE REPORT

An 8-year-old boy came to the Pediatric Dentistry Clinic Haji General Hospital Surabaya and presented swelling on his lower lip three weeks ago, which bothered the patient when he spoke or ate. Initially, there was a small vesicle which became gradually larger. The patient had a habit of biting his lower lip with his upper front teeth, which are positioned slightly behind their lower teeth.

Intraoral examination revealed a painless, fluid-filled, soft, transparent, pedunculated-based, solitary flaccid growth measuring about 3 mm × 2,5 mm × 2,5 mm on the right side of labialis inferior mucosa (Figure 1).



**FIGURE 1:** Intraoral view of mucocele on the lower lip preoperative.



**FIGURE 4:** Intraoral view of mucocele on the lower lip postoperative.

Examination was done, and a polyglactin suture Vicryl™ was placed on the base of the mucocele for fixation and followed by local anesthesia using 1,8 ml of mepivacaine hydrochloride (Scandonest®) around the lesion (Figure 2,3). Afterward, the numbness of the anesthetized area was inspected. Excision by surgical blade no 15 was placed on the pedunculated-based lesion that before fixated under a polyglactin suture, the mucocele lesion was then separated (Figure 4). The gauze was placed on the postoperative mucosa for homeostasis. A postoperative suture was unnecessary due to the minimal wound and hemorrhage that could be controlled. Moreover, aloe vera gel was applied to the postoperative wound, and paracetamol was prescribed every 8 hours if the pain persisted. The patient was recalled after one week for control. There was no complaint from the patient and he reduced his lip-biting habit. On objective examination, we found no recurrence of the lesion, and the color of the postoperative wound on mucosa labialis inferior had the same color as normal adjacent mucosa.



**FIGURE 2:** Lesion fixation using polyglactin suture.



**FIGURE 3:** Local anesthesia using jet injection.

## DISCUSSION

Oral mucocele refers to the accumulation of mucus in minor salivary glands, resulting in harmless cyst-like growths. The prevalence of mucoceles among the population ranges from 0.4% to 0.9%. Mucoceles primarily manifests in children and young adults, due to the increased chances of experiencing trauma [1]. The influence of trauma has been confirmed in numerous studies involving both humans and animals. In our study, trauma, notably lip biting (40.6%), emerged as the most prevalent cause [7]. Other etiologies of oral mucoceles are mechanical injury during chewing when the tissue of the lower lip becomes trapped between the teeth in the front of the upper and lower jaw, continuous irritation of the oral cavity from smoking, or exposure to high temperatures can damage the salivary gland, surgical interventions in the oral cavity can also lead to injury to the salivary gland and congenital mucocele in newborns is thought to stem from birth trauma affecting the oral cavity [8].

The most common site for these lesions is the mucosa of the lower lip. However, they can also appear in other areas such as the tongue, buccal mucosa, soft palate, retromolar pad, and lower labial mucosa. There are two forms of mucocele which are extravasation and retention. Extravasation mucocele occurs when a salivary gland duct ruptures, leading to the leakage of saliva into the surrounding soft tissues. Mucous extravasation is frequent in children, as the saliva that leaks out is initially encapsulated by inflammatory cells, followed by the formation of granulation tissue primarily composed of fibroblasts due to the absence of an epithelial lining. This process is classified as a pseudocyst or false cyst. In this case, we found that it was a pedunculated-based lesion, so the fixation could be placed precisely on the basis, subsequently, a whole mucocele lesion can be excised.

On the other hand, retention mucocele arises from a reduction or lack of glandular secretion caused by a blockage in the salivary gland ducts [8]. In children, the occurrence of mucous retention phenomena is rare because the ductal structure cannot hold excessive secretions [1].

From a clinical standpoint, oral mucoceles typically manifest as a blister or a raised nodule, varying in size, and feeling soft upon touch.

They exhibit a smooth and shiny surface, which can appear bluish, translucent, or have normal coloration depending on their depth within the tissues. Generally, oral mucoceles are identified during physical examination as painless swellings ranging from a few millimeters to 1.5 centimeters in diameter. They are circumscribed, dome-shaped, possess a floating consistency, and may cause discomfort during speech, chewing, and swallowing [9].

Spontaneous release of thickened mucin, particularly in shallow lesions, may happen, leading to a potential recurrence. Prolonged lesions may develop fibrosis on their surface over time. The treatment of oral mucoceles requires a range of approaches, including surgical and non-surgical methods, customized to fit the lesion's unique features and the patient's needs [1].

Surgical procedures offer several techniques, with excision being the most commonly employed method. Conventional surgical excision involves completely removing the cystic lesion along with its connected glandular tissue, decreasing the chances of recurrence. Another surgical option, marsupialization can handle larger lesions of more than one centimeter with minimal unintended harm and involves creating a controlled opening to allow continual drainage, thereby lowering the risk of fluid buildup (10). The use of electrocautery for mucocele removal offers the benefit of minimal bleeding. The electrode cuts from both its side and tip, ensuring immediate and consistent hemostasis. The resulting wound is typically painless, and the tip self-disinfects. However, drawbacks include the need for an anesthetic agent for cutting, the unavoidable odor of burning flesh, and reduced tactile sensation [11,12].

Non-surgical methods are also viable options, especially for smaller, asymptomatic mucoceles. A corticosteroid injection involves a single dose of steroid injected directly into the cyst after removing any fluid through aspiration. This injection causes the cyst's wall to collapse and initiates a strong inflammatory response, leading to significant fibrosis of the wall. Cryotherapy utilizes freezing to remove the cystic tissue, while steroid injections assist in reducing inflammation and promoting regression. However, these techniques may have constraints regarding the size and efficacy of the lesion. Conservative management, which entails monitoring without active treatment, may be suitable in certain instances, particularly when the mucocele shows indications of natural regression [3,12].

For the patient reported here, conventional surgical excision using a scalpel was the treatment option due to the size and form of the lesion which the fixation can easily managed by a polyglactin suture, so that excisions can be done more easily. This approach was favored because of its low likelihood of relapse, although it requires careful execution. Conventional surgical excision guarantees the removal of both affected and nearby glands along with the diseased

tissue before the wound begins to heal, reducing the chances of recurrence. This method is suitable for children, cost-effective, and can be done under local anesthesia [13].

It is essential to provide dental health education to both children and their parents. Discouragement habits like lip biting were crucial in this case since they triggered the occurrence of the oral mucocele [14]. Post-surgical instructions should include avoiding activities like sucking, licking, or playing with the surgical wound area using the tongue or hands, refraining from consuming hot food or drinks, and sticking to a soft diet to ensure the success of the treatment [15].

## CONCLUSIONS

Oral mucocele often occurs on the lower lip of children due to trauma or bad habits. Conventional surgical excision guarantees the removal of a whole small superficial mucocele lesion. Moreover, identifying the underlying cause of oral mucocele is crucial for patient education, enabling them to comprehend their condition and take measures to prevent its recurrence.

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