# Muccocele Treatment In Children: Case Report

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**ABSTRACT**

***Background:*** *Mucoceles are oral mucosal lesions caused by saliva accumulation due to trauma or obstruction of minor salivary glands, which are common in children and adolescents. Successful treatment in pediatric patients depends heavily on consideration of behavioral characteristics and appropriate behavioral management. This case report aims to report the surgical management of mucocele excision in a pediatric patient.*

***Case Report:*** *A 10-year-old boy came to the RSGM with his mother complaining of a lump on his lower lip that he frequently bit. Anamnesis revealed the lump had appeared one month ago. The child appeared quiet, occasionally looked around, and was able to communicate and accept the doctor's instructions. A history of systemic disease was denied. An intraoral examination of the left inferior labial mucosa revealed a single, reddish-white, approximately 5 mm nodule with clear borders. The diagnosis in this case was a mucocele on the left inferior labial mucosa. The child's behavior was classified as Frankl Classification 3 (Positive). Management is performed through surgical excision using a tell-show-do behavioural management approach, enhanced control, and positive reinforcement. The surgical procedure involves removing the entire cyst and the involved minor salivary glands to prevent recurrence.*

***Conclusion:*** *Mucocele treatment with surgical excision can be performed on children with Frankl's type 3 (positive) behavior. During treatment, a combination of tell-show-do, enhanced control, and positive reinforcement can be used.*



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## INTRODUCTION

The word "mucocele" comes from the words "mucus" (mucus) and "koilia" (cavity). A mucocele is defined as the dilation of a cavity due to the accumulation of mucus secretions. A mucocele is an oral mucosal lesion caused by the accumulation of saliva at the site of trauma or obstruction of a minor salivary gland duct [1–3]. The formation of a mucocele causes the lining mucosa to become elevated, thin, and loose, appearing as vesicles filled with clear or blue-gray mucus. Mucoceles can occur at any age but are more common in children and adolescents.[4,5]

The majority of mucoceles (85% to 95%) occur because of extravasation, while around 5% are due to mucus retention. A Brazilian study with 104 participants revealed that 50% were younger than 20 years old, while 34.6% were under 15 years of age.[6]

Mucoceles in children most often occur on the lower lip. They range in size from a few millimeters to 2 cm, with an average size of approximately 1 cm. If left untreated, they can increase in size due to increased mucin production. They can also shrink or rupture but recur if trauma occurs.[1,7,8]

Therapeutic approaches for mucoceles include marsupialization, surgical excision, dissection, laser ablation, cryosurgery, electrocautery, intra-lesional steroid injections, and irradiation [7]. Determining the treatment to be carried out needs to take into account the type of child's behavior, the late behavior management that can be carried out on the child, and the clinical indications of mucocele.[2,9,10] The aim is to report the management of mucocele in children.

## CASE REPORT

A 10-year-old boy came to the RSGM with his mother complaining of a lump on his lower lip that he frequently bit. Anamnesis revealed the lump had appeared one month ago. The child appeared quiet, occasionally looked around, and was able to communicate and accept the doctor's instructions. A history of systemic disease was denied. An intraoral examination of the left inferior labial mucosa revealed a single, reddish-white, approximately 5 mm nodule with clear borders (Figure 1). The diagnosis in this case was a mucocele on the left inferior labial mucosa. The child's behavior was classified as Frankl Classification 3 (Positive). The planned treatment was surgical excision.

**Figure 1** Clinical features of mucocele

## CASE MANAGEMENT

The treatment performed was excisional surgery. The first step was to explain the procedure to the patient's mother and provide informed consent. The operator performed a "tell-show-do" method for managing child behavior, explaining the treatment in the child's language, demonstrating the equipment to be used, and proceeding with the treatment.

Infiltration anesthesia was administered adequately with the appropriate dosage. Once the anesthetic had taken effect, excision was performed using a 15-blade scalpel. Surgical excision was performed by removing the entire cyst and the infected minor salivary glands (Figure 2). The next procedure was suturing the wound area. Two interrupted suturings were performed (Figure 3). During treatment, the operator also performed behavioral management to enhanced control,

instructing the patient to raise their left hand if they felt pain, discomfort, or wanted to rest. After treatment the dentist gives praise as a form of positive reinforcement.

**Figure 2** removing the entire cyst and the infected minor salivary glands

**Figure 3** interrupted suturings

The next visit was 7 days after the incision surgery. The patient came with her mother for a check-up and suture removal. The anamnesis revealed no pain and no longer had any bites. She was able to eat, but one suture had come loose. An intraoral examination revealed a white scar on the left inferior labial mucosa with a reddish surrounding area (proliferative phase), with one suture remaining (Figure 4). Treatment included spoiling and aff hecting (Figure 5).

**Figure 4** Clinical picture during the 7th day check-up

**Figure 5 post aff hecting**

The third visit took place 14 days after the surgical excision. The patient presented with her mother and stated that the wound had healed and was comfortable. An intraoral examination revealed complete wound closure on the left inferior labial mucosa and no scarring. The surgeon educated the patient and her mother on avoiding biting their lower lip to prevent recurrence.

## DISCUSSION

Mucus is exclusively produced by the minor salivary glands and is also the most important substance secreted by the major salivary glands. Mucoceles can occur due to mucus extravasation or retention.[11,12] Mucus extravasation is caused by trauma to the salivary gland's excretory duct, causing mucus to extravasate into the surrounding connective tissue. The inflammatory reaction of neutrophils is followed by macrophages. Granulation tissue forms a wall around the pool of mucin, and the salivary gland then undergoes

inflammatory changes. Ultimately, scar tissue forms around the gland.[9,13]

Mucus extravasation appears as a smooth, relatively painless mass ranging in size from a few millimeters to 2 cm. With superficial mucin, the lesion appears bluish. Adolescents and children are more frequently affected than adults. The lesion may rupture, and continued mucin production can lead to recurrence. Maximum size is usually reached within a few days after trauma.[14,15].

Mucus retention results from ductal obstruction caused by sialolithiasis, periductal scarring, or invasive tumors. Ductal narrowing prevents saliva from flowing properly, leading to the formation of ductal bubbles, which appear as mucosal swelling. Ductal obstruction can also cause salivary gland enlargement.[16–18] Treatment for children needs to take into account the child's type of behavior.

In this case, the child's behavior type falls into Frankl's 3 (positive) category. For this type of behavior, the operator chose the "tell, show, do" behavior management strategy combined with "enhanced control." The goal of "tell, show, do" is to teach the patient important aspects of a dental visit and to familiarize them with the dental environment and equipment.[19] In this case, the operator explained the surgical procedure using child language, such as using the analogy of "putting the patient to sleep first" for anesthesia.

During the procedure, the surgeon combined child behavior management with enhanced control. The goal is to allow the patient some degree of control during treatment to manage emotions and prevent disruptive behavior.[19] Enhanced control has been shown to be effective in reducing intraoperative pain. In this case, the patient was able to raise her left arm if she felt pain during the excision procedure.

Surgical excision and extirpation of surrounding tissue is the conventional treatment for persistent and recurrent mucocele lesions.[14] A simple flap is created using a blade, and the tissue is removed completely. Surgical excision is performed simultaneously with the removal of the involved accessory salivary tissue to prevent recurrence.[12]

After treatment, the operator offers praise such as "cool" and "great kid" as a form of positive reinforcement. Furthermore, the patient is instructed not to bite their lower lip to prevent a recurrence.

## CONCLUSION

Mucocele treatment with surgical excision can be performed on children with Frankl's type 3 (positive) behavior. During treatment, a combination of tell-show-do, enhanced control, and positive reinforcement can be used.

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