

Oral Mucocele in Early Childhood: Clinical and Behavioral Approaches in An 18-Month-Old

Fami Widya Pangestika ¹, Tania Saskianti ^{1,2,*}, Alocitta Anindyariani ¹ and Diah Ayu Purnama Sari ¹

¹ Department of Pediatric Dentistry, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia.

² Biomaterial and Tissue Engineering Research Center, Universitas Airlangga, Surabaya, Indonesia.

World Journal of Advanced Research and Reviews, 2025, 27(01), 318-322

Publication history: Received on 19 May 2025; revised on 26 June 2025; accepted on 30 June 2025

Article DOI: <https://doi.org/10.30574/wjarr.2025.27.1.2518>

Abstract

Introduction: Oral mucoceles are benign lesions resulting from trauma or obstruction of salivary gland ducts, most commonly affecting the lower lip. Although frequently seen in pediatric populations, their occurrence before the age of two is relatively uncommon.

Case History: This report presents a case of an 18-month-old male with a fluctuant, bluish swelling on the lower labial mucosa. Due to the patient's age and limited cooperation, surgical excision under local anesthesia was performed using pediatric wrap immobilization. A scalpel technique was chosen to minimize tissue trauma and allow complete removal of the lesion along with associated minor salivary glands.

Discussion: The use of a body wrap technique, supported by pediatric behavioral guidelines, enabled safe intraoperative management. Scalpel excision provided clear margins with minimal damage to surrounding tissues. Histopathological analysis confirmed an extravasation-type mucocele, with granulation tissue and absence of an epithelial lining. No recurrence was noted at the one-week follow-up.

Conclusion: This case highlights the importance of early diagnosis and age-appropriate behavioral management in pediatric mucocele. Scalpel excision combined with passive immobilization proved effective and safe for treating mucoceles in toddlers.

Keywords: Pediatric Mucocele; Extravasation Mucocele; Body Wrap Immobilization; Behavioral Management

1. Introduction

Mucoceles are benign, mucus-filled lesions of the oral cavity that arise due to the disruption of salivary gland ducts. Histologically, they are classified into two types: extravasation and retention cysts. The extravasation type, more commonly encountered in clinical practice, results from trauma-induced rupture of minor salivary gland ducts, leading to mucin spillage into the surrounding connective tissue without an epithelial lining.(1,2) The lower labial mucosa is the most commonly affected site, accounting for approximately 60% to 81% of cases, likely due to its susceptibility to trauma during daily activities. (2) In pediatric patients, trauma or habitual behaviors such as lip biting are common etiological factors.(3)

Clinically, extravasation mucoceles typically appear as bluish, translucent nodules with smooth, rounded margins, caused by mucous accumulation. On palpation, they are soft and fluctuant, typically exhibiting slow, progressive enlargement. Lesion size may range from a few millimeters to several centimeters. The bluish hue is attributed to

* Corresponding author: Tania Saskianti

vascular congestion, fluid accumulation, and superficial mucosal cyanosis.(1,4) Although some mucoceles resolve spontaneously, persistent lesions may require surgical intervention to prevent recurrence or interference with feeding and speech development. Early recognition and appropriate treatment are essential to avoid complications and support normal orofacial growth.(4,5) In children, diagnostic and treatment management may be complicated by limited cooperation and behavioral challenges.(3,4)

This case report presents an extravasation-type mucocele in an 18-month-old male patient, successfully managed through surgical excision using a scalpel under local anesthesia with pediatric wrap immobilization. Highlights clinical features, behavioral strategies, and histopathological findings relevant to pediatric mucocele management.

2. Case History



Figure 1 swelling on lower lip mucosal

An 18-month-old male patient, accompanied by his mother, presented to the Department of Pediatric Dentistry, Dental Hospital Universitas Airlangga, with a chief complaint of a swelling on the lower lip. The swelling had first appeared approximately two weeks prior, following minor trauma from a fall. Initially small, the lesion gradually increased in size. No history of fever present. Clinical examination of intraoral condition a solitary, well-circumscribed, dome-shaped swelling on the left lower labial mucosa. The lesion measured approximately 5 mm in diameter, exhibited a smooth, bluish translucent surface, and was soft and fluctuant on palpation. There were no signs of ulceration, discharge, or surrounding inflammation. The overlying mucosa was intact, and the lesion was non-tender (Figure 1).

Based on its characteristic appearance and history of preceding trauma, a provisional diagnosis of mucocele was established. The differential diagnosis included lymphangioma, lipoma, and irritation fibroma. The treatment plan involved surgical excision of the lesion using scalpel. As the patient was a minor, informed consent for treatment and publication of the case for scientific purposes was obtained from his parents.

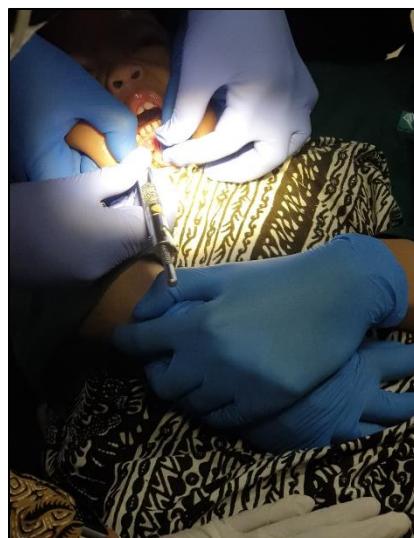


Figure 1 Behaviour management using a paediatric wrap technique with a blanket

Due to the patient's age (18 months) and limited cooperation, passive immobilization using a pediatric wrap technique with a blanket was employed to ensure safety and facilitate access during the surgical procedure. This form of behavioral management allowed for controlled movement while minimizing distress in accordance with standard pediatric dental protocols (Figure 2).

The procedure began with aseptic preparation using povidone iodine, followed by the application of benzocaine as a topical anesthetic. Local anesthesia was then achieved with 2% lidocaine containing 1:100,000 epinephrine, administered around the lesion site. The lesion was resected with scalpel no. 15 with semilunar shape. Blunt dissection was subsequently performed to fully expose the lesion and its associated minor salivary glands. After the removal of the mucocele, it was sutured with 4-0 silk suture, a simple interrupted suture technique was utilized to achieve optimal wound edge approximation and promote effective healing (Figure 3). Complete documentation could not be performed as the patient was cried upon mouth opening. In the end, postoperative instructions were given; soft diet for about 3 days and to avoid biting the lips due to the local anesthesia to avoid trauma. Patient was given analgesic and alloclair gel to applied on the wound site.

The excised lesion was fixed in 10% buffered formalin and submitted to the pathology laboratory for diagnostic confirmation. Histopathological analysis confirmed an extravasation-type mucocele, characterized by the absence of an epithelial lining. The lesion featured a mucin-filled cavity encased by granulation tissue, with numerous chronic inflammatory cells—including lymphocytes and macrophages—present within the surrounding stroma (Figure 4). Follow up one week later shown post-operative wound results was good. There were no swelling, no bleeding, and no pain (Figure 3).

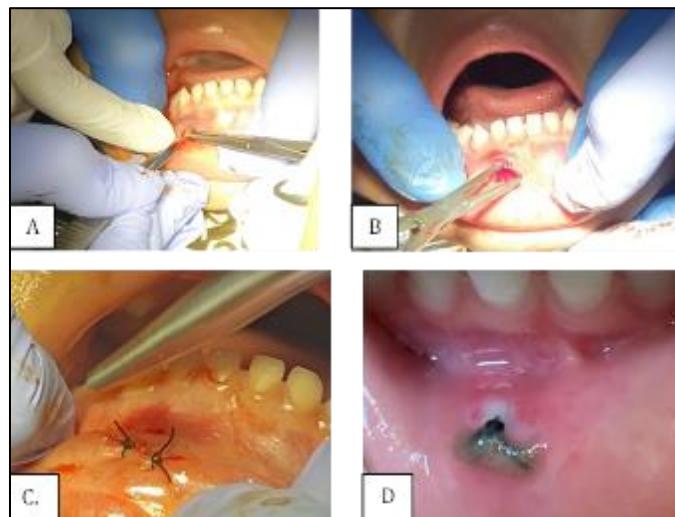


Figure 2 A. Excision using scalpel B. Blunt dissection to expose the lesion C. After mucocele removed, the lesion sutured with 4-0 silk suture D. Follow up one week later

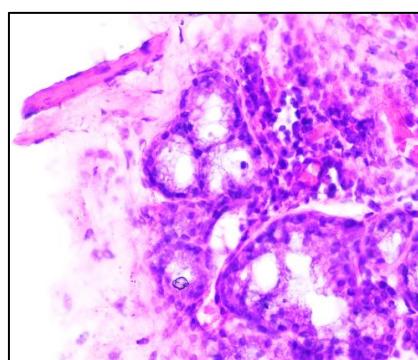


Figure 3 Histological appearance of resected mucocele tissue

3. Discussion

Mucoceles are among the most common benign lesions of the minor salivary glands, particularly prevalent in the pediatric population. They are typically the result of trauma-induced rupture of salivary ductal structures, leading to mucus extravasation into the surrounding connective tissue.⁽³⁾ In the present case, the clinical history of recent minor trauma from a fall, combined with the lesion's characteristic presentation—a dome-shaped, bluish, fluctuant nodule on the lower labial mucosa—strongly supported the diagnosis of an extravasation-type mucocele.^(1,6) The lower lip is the most frequently affected anatomical site for mucoceles. This high incidence is attributed to its vulnerability to repetitive microtrauma, particularly in children prone to falls or lip-biting habits.^(2,4)

Managing behavior during minor surgical procedures in toddlers presents inherent challenges. In this case, the use of passive immobilization through a pediatric wrap technique enabled safe and controlled surgical access, aligning with pediatric dental guidelines.^(7,8) According to the American Academy of Pediatric Dentistry (AAPD), this technique may be indicated when a child's limited cooperation compromises safe care delivery, provided that informed consent is obtained and the method is applied judiciously.⁽⁸⁾ Adequate local anesthesia was achieved using lidocaine with epinephrine, and the lesion was excised in full, with care taken to remove associated minor salivary gland tissue to minimize the risk of recurrence.⁽⁹⁾

In this case, a scalpel was chosen for surgical excision due to its ability to provide clean, precise incisions with minimal tissue trauma. Compared to thermal instruments, the blade technique minimizes collateral damage to adjacent oral structures, which is particularly advantageous in young children with delicate mucosa. The method also facilitates optimal visibility and control during dissection, ensuring complete removal of the lesion along with associated minor salivary gland tissue—an essential step in preventing recurrence. Additionally, scalpel excision is cost-effective and widely accessible in clinical settings, making it a practical choice for pediatric oral surgery.⁽¹⁰⁻¹²⁾ This approach is supported by Gurharikar et al., who reported successful outcomes using conventional scalpel excision in pediatric patients, with no recurrence observed at follow-up.⁽¹²⁾

Histopathological analysis remains the gold standard for definitive diagnosis. Extravasation mucoceles are identified by the absence of an epithelial lining, distinguishing them from retention cysts. Instead, they present as mucin-filled pseudocysts surrounded by granulation tissue and a chronic inflammatory infiltrate composed predominantly of lymphocytes and macrophages. The mucin pools are often bordered by foamy histiocytes and multinucleated giant cells, reflecting a foreign body-type response to spilled mucin in the connective tissue. This reactive process results from trauma-induced rupture of salivary gland ducts, most commonly involving minor salivary glands of the lower lip.^(4,13)

Postoperative recovery in this case was uneventful, with favorable wound healing and no evidence of recurrence at the one-week follow-up. This reinforces the importance of early intervention and precise surgical technique, particularly in young pediatric patients, where recurrence due to incomplete excision or reinjury is a concern. This case underscores the diagnostic value of integrating clinical features, trauma history, and histopathologic confirmation in managing mucoceles in young children. Furthermore, it highlights the necessity of age-appropriate behavioral strategies and parental education to ensure safe, effective treatment and minimize recurrence risk.

4. Conclusion

This case report presents the successful diagnosis and management of an extravasation-type mucocele in an 18-month-old child—an age group. The combination of classic clinical presentation, recent trauma history, and confirmatory histopathological findings underscored the importance of a comprehensive diagnostic approach. Surgical excision using a scalpel, supported by appropriate behavioral management through pediatric wrap technique, enabled safe and effective treatment. The favorable postoperative outcome without recurrence highlights the clinical value of early detection, precise technique, and caregiver cooperation in managing oral soft tissue lesions in very young patients.

Compliance with ethical standards

Acknowledgments

The authors thank the reviewers for their insightful suggestions.

Disclosure of conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this document.

Statement of informed consent

Informed consent was obtained from patient included in the study.

References

- [1] Tabassum R, shelat S, Parab S. Extravasation Mucocele- A Case Report. International Journal of Life-Sciences Scientific Research. 2016;2(4).
- [2] MAGALHÃES LS, CALAZANS MN do B, COTA ALS, NEMEZIO MA, BRÊDA JUNIOR MA. Diagnosis and treatment of mucocele in a pediatric patient: case report. RGO - Revista Gaúcha de Odontologia. 2020;68.
- [3] Gautam Y, Srivastava M. Mucocele in paediatric patients: A case series with review. International Journal of Applied Dental Sciences [Internet]. 2018;100(2):100-3. Available from: www.oraljournal.com
- [4] Naomi N, Tedjosasongko U, Saskianti T, Estu AR, Purnamasari S. Successful Diagnosis and Surgical Management of Mucocele in Pediatric Patients. International Journal of Scientific Advances. 2022;3(4).
- [5] Liu JL, Liu YN, Wang L, Wang DC. Waiting for self-healing as a primary management strategy for lower lip mucoceles. Clin Oral Investig. 2024 Jun;28(7):363.
- [6] Khandelwal S, Patil S. Oral mucoceles - review of the literature. Minerva Stomatol. 2012 Mar;61(3):91-
- [7] Gottschalk HP, Garza HH, McMahon ND, Henry SL. Use of a "Fast, Feed, and Wrap" Technique with Local Anesthesia for In-Office Surgical Correction of Postaxial Polydactyly Type B in Infants. Journal of the Pediatric Orthopaedic Society of North America. 2022;4(3).
- [8] American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. The Reference Manual of Pediatric Dentistry. 2023; III:292–310.
- [9] Lesmana S, Rani DP, Rizal MF. Minimizing the recurrence risk of mucocele by surgical excision. In: Case Reports in Dentistry. 2018.
- [10] Rawat M, Saxena S, Sankhla B. A Comparative Study of Diode Laser and Conventional (Scalpel) Technique for A Comparative Study of Diode Laser and Conventional (Scalpel) Technique for Biopsy of Soft Tissue Oral Lesions. 2021;20(May):37–43.
- [11] Khuda F, Kabir MA, Shikder MS, Nasruddin NS, Noor A. Management of an Oral Fibroma by Scalpel Excision in a Patient on Anticoagulant Therapy: A Case Report. International Journal of Dentistry Research. 2022;7(3):52–5.
- [12] Gurharikar A, Sortey S, Chaudhari P, Nagpal D, Hotwani K, Yadav P. Management of oral mucocele by surgical excision in a pediatric patient: A case report. Journal of Advances in Dental Practice and Research. 2022; 1:37–40.
- [13] Mohammad S, Khan M, Salahuddin B, Durrani SH, Bashir N, Shakeel S. a Spectrum of Oral Mucoceles: Histopathology and Management. Pakistan Oral and Dental Journal [Internet]. 2019;39(2):140-3. Available from: <https://www.podj.com.pk/index.php/podj/article/view/375%0Ahttps://www.podj.com.pk/index.php/podj/article/download/375/263%0Ahttps://www.podj.com.pk/index.php/podj/article/view/375>