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(CASE REPORT)

Cautery excision of oral mucocele in pediatric children: A case report

Putri Qomaria Andarini [1], Nora Kharisma Rissandhika [1], Rosiana Prayogo [1], Siti Nur Lestari [2], Firly Cahya Khairani [2] and Prawati Nuraini [1,*]

[1] *Department of Pediatric Dentistry, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia.*
[2] *Department of Pediatric Dentistry, Hajj Regional General Hospital, Surabaya, Indonesia.*

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Abstract

Introduction: Oral mucocele is a common, oral lesions that mostly present as painless, clear, or bluish cysts on the lower lip of children and young adults. These are harmless, mucus-filled growths usually resulting from a little salivary gland or duct injury. Mucus can leak into surrounding subepithelial tissue when the salivary glands are injured by lip biting, sucking, or trauma. This is known as a mucus extravasation cyst, and it is the most frequent variety of mucoceles. This report presents two cases of mucocele. Case History: Two case studies of oral mucoceles reported that almost all included lip mucoceles were clinically bullous lesions, it was soft, fluctuant, and palpable, which corroborates the hypothesis that lip mucoceles are commonly incited by traumatic injury such as tooth impingement and lip-biting habit. All cases were treated with a simple excision using an electrocautery. Two lesion diagnosis was confirmed by Histopathology anatomy (HPA). Discussion: Mucoceles are common oral lesions often seen in children and adolescents, typically caused by lip biting due to psychological stress. Diagnosis is based on clinical features such as rapid appearance, size variations, and bluish color. Treatments include scalpel excision and electrocautery, with electrocautery providing minimal bleeding and painless wounds. Conclusion: One of the typical salivary gland lesions in the oral cavity is mucocele. The use of electrocautery is known to be beneficial for wound healing. Awareness education for children and parents is necessary to eliminate a lip-biting habit.

Keywords: Mucocele; Electrocautery; Children; Human and health; Case report

1. Introduction

Oral mucocele is a common exophytic lesion that presents clinically as one or more soft, smooth, spherical, painless nodules ranging in color from translucent blue to pink. It is caused by salivary accumulation as a result of pathological changes in the oral minor salivary glands (MSGs) (1). Histologically, Oral Mucoceles can be divided into two types, the more frequent extravasation type and the retention type. Retention cysts have an epithelial lining in only 8% of instances, but extravasation cysts are more common (92% of cases) and are characterized by a mucous pool surrounded by granulation tissue. The extravasation type is caused by salivary mucus accumulation in the tissues without epithelial lining. Conversely, the retention type is occasionally found as a cyst lined by epithelium (1,2). Extravasation mucoceles are more commonly seen in children and adolescents. Because of the damage, saliva leaks into the connective tissue, rupturing the duct (2).

Mucoceles are usually asymptomatic but sometimes can cause discomfort by interfering with speech, chewing, or swallowing (3). Mucocele can develop a few days after minor trauma and, if left untreated, can remain unaltered for months. Its diameter could be anywhere between a few millimeters and a few centimeters. Without treatment, based on rupture and the ensuing generation of mucin, an episodic decrease and increase in size may be seen (4). Differential

* Corresponding author: Prawati Nuraini

diagnoses for mucoceles may include fibrous hyperplasia, focal papilloma, lipoma, fibroma, mucoepidermoid carcinoma, bullous lichen planus, pemphigoid, and herpes (5).

Numerous therapeutic approaches have been outlined in the medical literature, including surgical excision with a scalpel, carbon dioxide ablation, laser excision, marsupialization, and cryosurgery. In the event of a recurrence, it is recommended to remove the cyst, together with the adjacent salivary glands, down to the muscular layer (5). Excision with electrocautery is a simple, less traumatic, and well-tolerated technique with the most important advantage of virtually no bleeding and zero side effects. Also, if any recurrence occurs, surgical excision can be easily carried out (6).

A limited study on the use of electrocautery to remove mucoceles in pediatric patients was published; it found that electrocautery is a faster, easier method with less discomfort following surgery than traditional surgical excision. Thus, the purpose of this case study is to describe clinical instances of pediatric patients having mucocele excision with electrocautery in order to reduce damage and discomfort.

2. Case History

2.1. Case 1

A 9 years old boy was brought to the Pediatric Dentistry Department RSUD Haji Provinsi Jaw a Timur with a chief complaint of swelling present in the inner aspect of the lower lip in the 31 41 region for the past months. The child also reported having lip biting habit. Swelling was painless and no past medical history like fever or malaise was present. On examination of the lesion, it was soft, fluctuant, and palpable with a diameter of 7 mm. The parent reported difficulty in eating and talking because of the lesion. The swelling was diagnosed as mucocele, an extravasation type, after anamnesis and clinical examination.

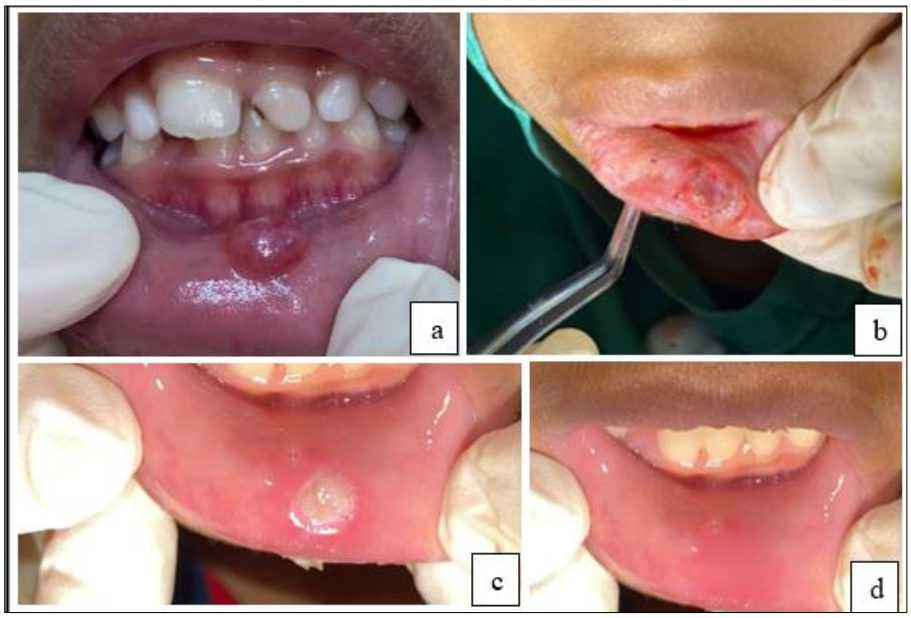

Figure 1 Case 1: (a) Mucocele on the lower lip; (b) After excision by electrocautery; (c) 7 days follow-up, lower lip view with good healing; (d) 15 days follow-up, the tissue is completely healed

Finally, the case was diagnosed as a mucocele based on the history of lip-biting habits and clinical features. The treatment was planned and explained to the parents. Once the parent was concerned treatment was performed Considering the size of the swelling and the functional disturbances associated with it, the treatment plan was aimed for a complete surgical excision using electrocautery. Electrocautery was performed under local anesthesia and administrated through local infiltration on the lower lip. The electrocautery was set to mode cut + coagulant 1, with speed 5 and tip number T2 to remove the mucocele. The ideal way to oblige the lesion is to start at the peripheral margin of the lesion in a circular motion. The excised lesion was stored in 10% formalin and sent to the Department of Oral Pathology at Rumah Sakit Haji. Post-operative instructions are recommended to the patient to avoid lip biting and spicy food. During and postoperative bleeding was very minimal and no sutures were necessary. The patient was prescribed

oxygene, aloe vera, and zinc gel to relieve postoperative discomfort. The healing stage was observed 7 days after the excision of the mucocele without any complaints. After 15 days the tissue is completely healed.

2.2. Case 2

A 12-year-old girl was brought to Pediatric Dentistry Department Rumah Sakit Haji Surabaya. On examination, a localized intra-oral swelling was noticed on the left side of the lower lip in 41 42 regions, measuring around 8 mm. The parent reported the daughter has lip biting habit. A well-circumscribed, transparent, swelling was seen. The swelling was flaccid and painless, with a smooth surface. Based on the history and clinical features, the lesion was provisionally diagnosed as mucocele. The treatment plan called for a complete surgical excision with electrocautery. Local anesthesia was administered via local infiltration on the lower lip before electrocautery was performed. To remove the mucocele, the electrocautery was set to mode cut + coagulant 1, speed 5, and tip number T2. The lesion was sutured with 4-0 silk suture. The excised lesion was stored in 10% formalin and sent to the Department of Oral Pathology at Rumah Sakit Haji. Post-operative instructions were recommended to the patient to avoid lip biting and spicy food and were prescribed oxygene, aloe vera, and zinc gel to relieve postoperative discomfort. After a week the suture was removed. The lesion healed and no complaint from the patient.

Figure 2 Case 2: (a) Mucocele on the right side of the lower lip; (b) After excision by electrocautery, Lesion was sutured silk suture; (c) 7 days follow-up, lower lip view with good healing; (d) 21 days follow-up, the tissue is completely healed

3. Discussion

Mucoceles are common lesions of oral mucosa that can affect both children and adolescents. The diagnosis of oral mucocele is mainly based on its clinical features with the appearance being most pathognomic. Its location, history of trauma, rapid appearance, variations in size, bluish color, and consistency are some of the important factors that should be considered before making a confirmatory diagnosis. On palpation, the lesion often fluctuates in contrast to lipomas and tumors of minor salivary glands showing no fluctuation (7).

In these two cases, both mucoceles were caused by lip-biting habits which may be related to psychological stress. Lip biting habit may occur as a result of a demanding environment in which a child is expected to understand his or her responsibility, control his or her childish behavior, and follow some rules, which may cause the child to feel frustrated and depressed (6). The mucocele is a pathology recognized as being principally caused by the mechanical trauma deriving from biting minor salivary glands in the inferior lips (8). Injury to the salivary glands through lip biting, sucking, or trauma can cause mucus to leak into surrounding subepithelial tissue, resulting in the most common variant of mucocele called a mucus extravasation cyst. Mucoceles may also develop from mucus buildup behind blocked glandular ducts, resulting in a less common variant of mucocele called a mucus retention cyst (9).

Postoperative pain and recovery are crucial factors to consider while deciding on the best surgical excision technique for the mucocele. There are several methods for treating lower lip mucocele. These include scalpel excision, CO2 laser ablation, electrosurgery, gamma-linolenic acid (GLA) treatment, and micro-marsupialization (10). One of the most popular tools for removing a mucocele is the scalpel. Most skilled dentists can perform it, and it doesn't take a lot of equipment or money. It does necessitate extreme precision and in-depth familiarity with the surrounding anatomical structures and the mucocele. It does require great precision and detailed knowledge of the mucocele and the surrounding anatomy. Postoperative discomfort, increased bleeding, and delayed healing are the disadvantages of this approach (6).

In this study, we found that electrocautery effectively eliminated mucoceles on the lip or buccal mucosa with minimal discomfort. Histopathological examination of two recurred lesions showed functioning minor salivary glands with atrophic changes and excretory ducts with dilatation in and near the fibrosis tissue. Such histopathologic findings suggest that electrocautery had insufficient effects on a few minor salivary glands, i.e., survived acini in atrophic glands caused a recurrence of mucocele (11).

Advantages of electrocautery observed in these cases are minimal bleeding, the electrode cuts on its side as well as on its tip, cuts are made with ease when the device is set correctly, hemostasis is immediate and consistent, the wound is nearly painless and the tip is self-disinfecting. Disadvantages of electrocautery include the need for an anesthetic agent for cutting, unavoidable burning flesh odor, and low tactile sense. In both cases, there was no recurrence seen after the recall period of 3 months (4).

4. Conclusion

Oral mucocele are mainly benign and self-limiting in nature. A final diagnosis is made based on the histological report after clinical findings have been considered. When treating children, the most crucial factor is minimizing their discomfort. Since electrocautery can reduce anxiety and discomfort, it may be the preferred treatment for mucocele. There is less bleeding and tissue damage as a result.

Compliance with ethical standards

Acknowledgments

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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 patients included in the study.

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