Journal of Chitwan Medical College 2022;12(39):126-128
Available online at: www.jcmc.com.np

CASE REPORT

COMBINATION THERAPY FOR THE MANAGEMENT OF MUCOCELE AND RANULA IN CHILDREN: CASE SERIES

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Received: 06 Feb, 2022

Accepted: 03 Mar, 2022

Published: 15 Mar, 2022

Key words: Children; Combination therapy; Intralesional Steroids; Micromarsupialization; Mucocele; Ranula.

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DOI:https://doi.org/10.54530/jcmc.648

Citation

Rai A, Koirala B, Dali M, Shrestha S. Combination therapy for the management of mucocele and ranula in children: case series. Journal of Chitwan Medical College. 2022;12(39):126-8.

ABSTRACT

Mucoceles and ranulas are common cystic lesions affecting the oral mucosa. They typically appear as bluish, often fluctuant, nontender submucosal masses with a normal overlying mucosa. Combination therapy, comprising of micromarsupialization with intralesional steroid administration is a conservative management technique for the management of large mucoceles and ranulas. This case series reports three cases, in which combination therapy was chosen for the management of a large mucocele and ranulas in six, seven and nine-year-old children, respectively. There was complete resolution of all the swellings with no recurrence in any of the cases until the six months follow-up visit. Combination therapy showed promising outcomes as a conservative treatment modality, especially in pediatric population for the management of large mucoceles and ranulas.

INTRODUCTION

Mucocele is a common cystic lesion seen in the oral cavity, which is caused by accumulation of mucous inside the tissues. Clinically, it appears as a soft, often fluctuant, discrete, painless swelling of the mucosa.[1,2] Ranula is the mucocele found in the floor of mouth.[3] Depending upon the size of lesion, various treatment methods are available. Micromarsupialization, a conservative technique, is also a rescue means for pediatric patients while managing large lesions. Recurrence is quite common in micromarsupialization. To lower the chance of recurrence, intralesional steroid injection is used along with micromarsupialization, and the procedure is known as combination therapy.[1,4,5]

CASE REPORT

Case 1

A nine-year-old female patient presented to the department with the chief complaint of swelling on the under surface of tongue for one month. On examination, there was a swelling of approximately 2.5 cm x 2 cm size in the ventral surface of the tongue on the right side (Figure 1a). The swelling was soft, fluctuant, non-pulsatile and nontender. There was no history of bloody or purulent discharge from the swelling. There was no significant medical history. Based on the history and clinical examination, diagnosis of mucocele of the ventral surface of the tongue was made.

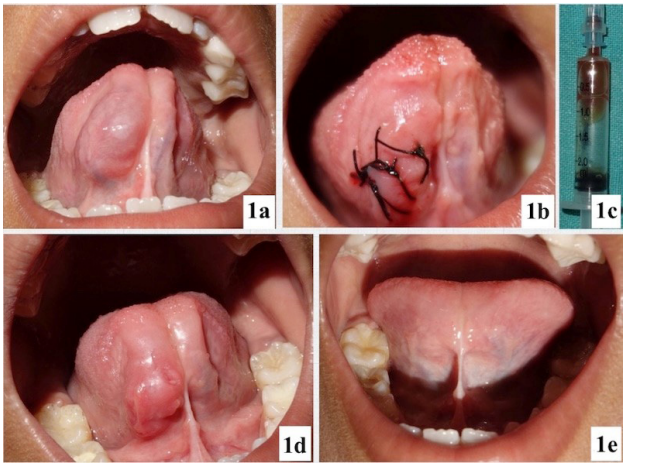

Figure 1: 1a-Pre-operative photograph, 1b-Immediate post-operative after combination therapy, 1c-Fluid aspirated from the lesion, 1d-Follow-up after four weeks, 1e-Follow-up after six months.

Case 2

A six-year-old female patient reported with the chief complaint of swelling in the mouth for one month. On examination, swellings of 2.5 cm x 1.5 cm size was found in the right side of the floor of the mouth (Figure 2a). The swelling was soft, fluctuant, non-pulsatile, nontender, and there was no history of discharge. Medical history was non contributary. Diagnosis of ranula was made based on the history and clinical examination.

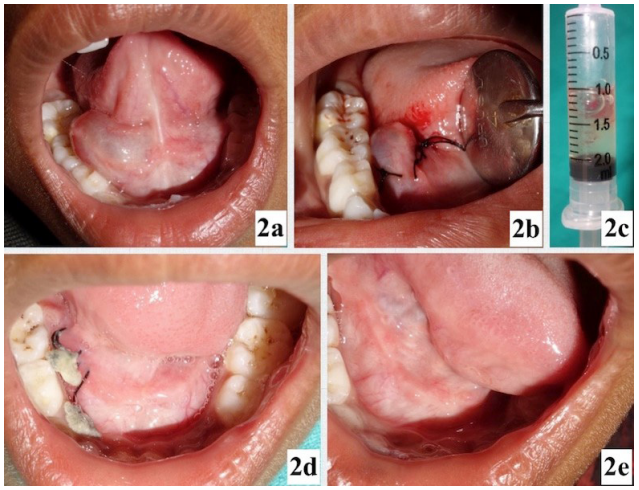

Figure 2: 2a-Pre-operative photograph, 2b-Immediate post-operative after combination therapy, 2c-Fluid aspirated from the lesion, 2d-Follow-up after three weeks, 2e-Follow-up after six months.

Case 3

A seven-year-old male patient reported with the chief complaint of swelling in the lower part of mouth since the past two months. On examination, a swelling of 3.5 cm x 2 cm size was found in the floor of mouth in the left side (Figure 3a, 3b). The swelling was soft, fluctuant, non-pulsatile and nontender. There was no history of bloody or purulent discharge, and the medical history was non contributary. Based on the history and clinical examination, diagnosis of ranulas was made.

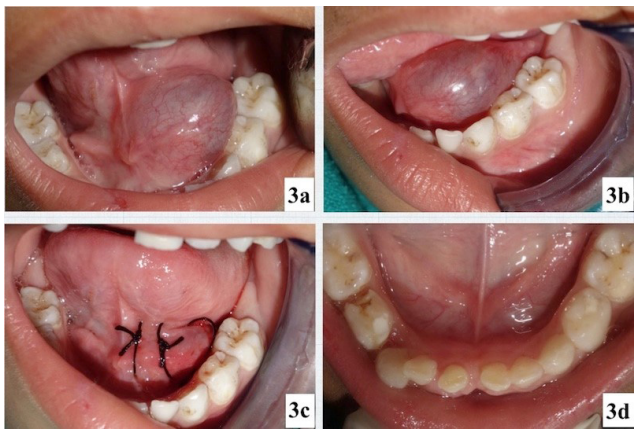

Figure 3: 3a,3b-Pre-operative photographs, 3c-Immediate post-operative after combination therapy, 3d-Follow-up after six months.

Owing to the size of the lesions, combination therapy was opted for the management of the lesions. Informed consent and assent from the parents and the patients respectively were taken before the commencement of procedure. Patients were then asked to rinse with 0.2% chlorhexidine gluconate solution (CHX, Asian Pharmaceuticals, Nepal) diluted with water (1:1) before the procedure. Topical anesthetic spray (Lidocaine 15%, Nummit, ICPA, India) application was done, which was then followed by the infiltration of local anesthetic agent (Lignocaine 2% with 1:200000 Adrenaline, LOX*2% Neon Laboratories Limited, Mumbai, India) around the periphery of the lesion. After anesthesia, 3-0 silk suture (Ethicon Mersilk suture, Johnson and Johnson, India) was passed through the lesion along its widest diameter taking care not to reach the underlying tissue, and a surgical knot was made. Three sutures in the larger lesions (Figure 1b, 3c), and two sutures in the smaller lesion were placed (Figure 2b). Aspiration of fluid was done following the placement of sutures (Figure 1c, 2c). After aspiration, 1ml Dexamethasone (Dexamethasone 4mg/ml, Dexona, Zydus Cadila, India) was slowly injected into the base and adjacent to the lesion's periphery. All the patients were re-evaluated after seven and 14 days, where second and third doses of Dexamethasone injection were administered. Sutures were then removed on 21 days follow-up visit. On the follow-up evaluations of one, three, and six months, there were no evidence of recurrence (Figure 1e, 2e, 3d).

DISCUSSION

Incidence of mucoceles have been found to be 0.4-0.9% in the general population.[2] The lower labial mucosa is the most frequent site of involvement, but it does not spare any other areas where minor salivary glands are present, like the floor of mouth, ventral surface of tongue, soft palate, retromolar region, and buccal mucosa. Evolution of mucoceles may be rapid or slow and painless, and there may be periods of remission and exacerbation. Histopathologically, mucoceles can be classified as mucous retention or extravasation types of cysts. Retention mucoceles are characterized by the presence of epithelial tissue, whereas the extravasation types have a covering with granulation tissue. Retention mucoceles result from the obstruction of duct of a minor or accessory salivary gland. Extravasation mucoceles generally have traumatic origins such as lip biting, trauma etc. Extravasation mucoceles are commonly seen in the younger age groups, whereas the retention types are more common in the elderly.[1,4] Ranulas are the retention cyst of the minor or sublingual salivary glands or their ducts. The term 'ranula' is derived from the latin word 'rana' meaning frog, as its appearance resembles the underbelly of a frog.[4] Ranula may sometimes extend bilaterally, and larger ranulas can cause difficulty in speaking and swallowing.[3]

Several techniques have been proposed for the treatment of mucoceles such as surgical excision of the lesion with or without associated salivary glands, marsupialization, electrosurgery, cryosurgery, laser excision, high-potency topical corticosteroids, gamma-linolenic acid, OK-432, nickel gluconate-mercurius heel-potentized swine organ preparations and micro-marsupialization.[1,2,4,5] Size of the lesion

is one of the determining factors for choosing the treatment modality. Surgical treatment is opted for the management of smaller lesions whereas, conservative therapy is opted for the larger ones. In combination therapy, micromarsupialization and intralesional steroid injection is used. However, proper case selection is important as the combination therapy does not enable biopsy to be conducted.[1,3]

Morton and Bartley first described the technique micromarsupialization in 1995. In this procedure, sutures are passed along the largest diameter of the lesion aiming to drain the accumulated mucous. This technique is simple, less time consuming, conservative, and the least traumatic among all other management options, making it the treatment of choice in children. The duration of suture retention in the lesion varies from seven[1] to 30[6] days. Sandrini et. al in 2007, suggested placement of maximum number of short sutures along the lesions. Their understanding was that maximum number of short sutures would allow formation of maximum number of short, epithelialized drainage tracts. The authors in present case opted for lesser number of sutures i.e., three sutures in larger and two sutures in smaller lesions, to avoid irritation due to sutures and inflammation due to infection, which ultimately helps to maintain patient compliance in case of pediatric patients. Sutures are kept for longer duration in order to facilitate the development of epithelialized tracts along the path of the sutures, which ultimately results in decreased recurrences.[6] However, some authors believe that the sutures, if left for a long time, would be a cause of secondary infection and discomfort for the patient.[1] Injection of a high-potency corticosteroid promotes the shrinkage of dilated salivary ducts or pools similar to a sclerosing agent, and also decrease the chance of recurrence.[5] Mortazavi et. al[5] reported that they injected intralesional steroid prior to placement of sutures, whereas authors in present case opted for injection of intralesional steroid after placement of sutures (micromarsupialization) to minimize chance of drainage of intralesional steroid along with the mucous.

CONCLUSION

Combination therapy is simple to perform, conservative, well tolerated by the patients, with no side effects as can be seen with the invasive procedures. In the authors' experience, the outcomes are as efficacious as the surgical excision. In all the three cases, resolution of the lesions was uneventful, good patient compliance was achieved and there was no recurrence till six-month follow-up. Combination therapy thus, can be considered as an effective alternative for the treatment of large mucoceles and ranulas, especially in children and all other patients who are not fit for complex surgeries.

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