ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at: www.ijdsir.com

Volume – 2, Issue – 2, March - April - 2019, Page No. : 341 - 347

Combination Therapy for Management of Mucocele in Children – A Case Series

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Aim: The aim of the case series was to describe the efficacy of a novel approach for management of extravasation mucocele using a combination therapy of micro-marsupialization and intralesional corticosteroids.

Case Report: A total of 5 child patients with the age range of 8 to 10 years diagnosed with extravasation mucocele were treated with a combination technique of micro-marsupialization and intralesional corticosteroids. There was no history of recurrence after a follow up period of 6 months to 1 year.

Discussion: Mucoceles are the most common lesions of the oral cavity mainly formed due to extravasation of mucus from a minor salivary gland due to trauma. Though a wide range of treatment options are available for management of mucocele, this combination therapy has both the advantages of micro-marsupialization technique of being less traumatic and less chance of recurrence and dexamethasone therapy of being economical and performed effortlessly in children, proving it to be superior and clinically efficient compared to other techniques.

Conclusion: A novel approach combining both the techniques of micro-marsupialization with intralesional corticosteroids was simple, conservative, easily accepted and well tolerated by children.

Keywords: Mucocele, extravasation, micro-marsupialization, intralesional corticosteroids.

Introduction:

Mucoceles are the most common lesion of the oral cavity with an incidence of 2.5 lesions per 1000 patients. The term “mucocele” is derived from two latin words ‘muco’ meaning mucus and ‘coele’ meaning cavity, which is a mucus filled cavity. These lesions are most common in second decade of life and rare in infants.[1] Based on etiology, mucoceles are classified into extravasation and retention types, extravasation type results from a broken salivary gland duct and retention type is a result of dilatation of duct secondary to obstruction. Extravasation mucocele appear most commonly on the lower lip whereas retention mucocele appear at any other location of the oral cavity, however clinical differentiation between the two types is very difficult.[2] Although many treatment

modalities are available for management of mucocele, this case series presents the significance of combination therapy of micro-marsupialization with intralesional corticosteroid especially in pediatric patients.

Series of Cases

A total of 5 cases (3 males and 2 females) within an age range of 8 to10 years with a chief complaint of swelling in the lower lip attending the outpatient department of Pedodontics and Preventive Dentistry were included in the study. The study was initiated after the protocol had been approved by the Institutional Committee of Ethical Research. All the subjects were informed about the protocol of the study and written informed parental consent was obtained for the same. Children with any known history of contra indications for systemic steroids and those who are not willing to receive injections were excluded from the study. All the lesions were principally diagnosed based on the following clinical features: location, history of trauma, rapid appearance, variations in size, bluish color, and consistency. A final diagnosis of extravasation mucocele was confirmed after obtaining proper history and clinical examination. The treatment done was a combination therapy of micro-marsupialization technique with intralesional corticosteroids. The concise summary of extravasation mucoceles was tabulated with the details

(Table 1)

Technique followed

The area of the lesion was disinfected with 0.1% iodine and after that local anesthesia (2% lignocaine with epinephrine) was administrated. After obtaining adequate anesthesia, 1 ml of dexamethasone (4 mg/2 ml) was injected into the base of the lesion with a traditional needle. Then micro marsupialization was performed to drain the mucus and reduce the size of lesion. This technique consisted of passing a thick silk suture through the internal part of the lesion along its widest diameter followed by making a surgical knot. Instructions about oral hygiene maintenance were given to the patient and were recalled after 1 week. The same procedure of intralesional injection of dexamethasone combined with micro-marsupialization technique was repeated 3 times at 1week intervals. Complete reduction of the lesion was observed after 3 weeks. There was no history or sign of recurrence or local discomfort after a follow up period of 6 months to 1 year. (Figures 1 to 5)

Discussion

Mucoceles can appear at any site of oral mucosa containing salivary glands. Extravasation mucocele appear most commonly on the lower lip whereas retention mucocele appear at any other location of the oral cavity. Mucoceles were most commonly seen on lower lip as it is the probable place for trauma especially pre molar level.[2] These lesions have a sessile or pedicle base, are of flaccid or fibrous consistency, and may reach more than 1 cm in size. They have clearly defined limits and a smooth surface and are usually lined with a thin mucosa. Evolution is rapid or slow and painless, with periods of remission and exacerbation. Most mucoceles frequently resolve spontaneously. If they do not resolve on their own, there are various treatment modalities available for management of Mucoceles which include:

Surgical excision, Carbondioxide laser ablation, Cryosurgery, Electrocautery, Sclerosing agents[6], Gamma-linolenic acid[5], Marsupialization[12], Intralesional corticosteroidal therapy, Micro-marsupialization, Micro-marsupialization with intralesional corticosteroidal therapy

The most common treatment for mucocele is surgical extirpation of the surrounding mucosa along with glandular tissue down to the muscle layer.[7] Baurmash et al proposes complete resection of the mucocele through careful dissection, and ensuring that both the affected and

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neighboring glands are removed, along with the pathological tissue, before primary closure of the wound[8]. It has several disadvantages such as lip disfigurement, damage to adjacent ducts with further development of satellite lesions[9, 10] with a 2.8% recurrence rate[11].

Corticosteroids act as most potent anti-inflammatory agents that inhibit the expression of multiple inflammatory genes and may also increase the transcription of genes coding for anti-inflammatory proteins. They also act like a sclerosing agent causing shrinkage of the dilated salivary ducts.[14] In regard to cost effectiveness, dexamethasone injection therapy is economically and esthetically more advantageous than surgery, cryotherapy or laser ablation. It can be available in almost every medical or dental setting for a low price.[15] Injection of a high-potency topical corticosteroid has been described in treatment of painful and recurrent oral mucoceles.[13]

Micro-marsupialization technique is considered as an ideal treatment in case of pediatric patients because it is simple, less traumatic and well tolerated by the child patient and has less chance of recurrence.[16] Selvig et al (1998) stated the introduction of a suture causes epithelialization around the suture, establishing new excretory ducts between the surface and the underlying salivary gland tissue, leading to the disappearance of the lesion. On this basis, it is suggested that the suture be passed through the widest diameter of the lesion in order to involve all the parts that compose it.[17] The immediate extravasation of mucus after the passage of the suture and consequent reduction of the lesion in volume is a fundamental clinical characteristic for the diagnosis of mucus retention phenomena.[18]

Morton & Bartley stated that the suture may come loose after 2 or 3 days and in such cases, treatment has to be repeated.[19] According to Racey et al, silk sutures produce inflammation after 7 days and the inflammed area was noted in all cases after suture removal which may be due to surgical trauma and accumulation of debris around the suture.[20] Sandrini et al has suggested that the sutures be maintained for 30 days, but further studies have shown that keeping sutures for such long periods in children will be a cause of discomfort and infection because of suboptimal oral hygiene.[21] The main disadvantage of this technique was it does not enable a biopsy to be conducted, and the diagnosis remains exclusively clinical. A combination of micro-marsupilization technique along with injection of dexamethasone into the body of the lesion was proved to be clinically efficient. This combination technique is not contraindicated for children with systemic diseases. In our case reports, we followed this technique because it has advantages of micro-marsupialization technique of being simple, conservative, less traumatic, well tolerated and less chance of recurrence and dexamethasone injection therapy of being economical, short time span, and performed effortlessly and easily accepted by patient.[7,18]

Conclusion:

The management of mucocele includes a wide range of options like surgical excision, laser ablation, cryosurgery, electrocautery, sclerosing agents, gamma- linolenic acid, marsupialization, micro-marsupialization, intralesional corticosteroidal therapy. A novel approach of combining Micro-marsupialization technique with intralesional corticosteroids therapy is a minimally invasive procedure and is acceptable by the pediatric patients.

Acknowledgement

Authors acknowledge the immense help received from the scholars whose articles are cited and included in reference of this manuscript. The authors are also grateful to authors/ editors/ publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

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References

1. Rupam Sinha, Soumyabrata Sarkar, Tanya Khaitan, ArpitaKabiraj, and AnirbanMaji et al. Nonsurgical Management of Oral Mucocele by Intralesional Corticosteroid Therapy. International Journal of Dentistry 2016.
2. J. Ata-Ali, C. Carrillo, C. Bonet, J. Balaguer, and M. Penarrocha. Oral mucocele: review of the literature. J Clin Dent.2010; 2(1):18-21.
3. H. Rodriguez, R. DeHoyos Parra, G. Cuestas, J. Cambi, and D. Passali. Congenital mucocele of the tongue: A case report and review of the literature. The Turkish Journal of Pediatrics 2014; 56(2):199-202.
4. Neha Bhargava, Prateek Agarwal, Nitin Sharma, Mayank Agrawal, Mohsin Sidiq, and Pooja Narain. Case Report- An Unusual Presentation of Oral Mucocele in Infant and Its Review. Case Reports in Dentistry
5. J.A MC Caul, P J lamey. Multiple oral mucoceles treated with gamma – linolenic acid – report of a case. Br J oral maxillofac surg 1994; 32(6):392-393.
6. Ohta N, Fukase S, Suzuki Y, Treatment of salivary mucocele of the lower lip by OK 432.Auris Nasus Laryx 2011;38(2):240-3.
7. Mortazavi H, Baharvand M, Alirezaei S, Noor-Mohammadi R. Combination therapy in a large lower lip mucocele: A non-invasive recommended technique. Dent Hypotheses 2014; 5:127-9.
8. H. D. Baurmash, Mucoceles and ranulas. Journal of Oral and Maxillofacial Surgery 2003; 61(3):369–378.
9. Piazzetta CM, Torres‐Pereira C, Amenábar JM. Micro‐marsupialization as an alternative treatment for Mucocele in pediatric dentistry. Int J Paediatr Dent 2011; 17:1‐5.
10. S. Laller, R. S. Saini, M. Malik, and R. Jain, An appraisal of oral mucous extravasation cyst case-mini review, Journal of Advanced Medical and Dental Sciences Research 2014; 2(2) : 166–170.
11. Yamasoba T, Tayama N, Syoji M, Fukuta M. Clinicostatistical study of lower lip mucoceles. Head Neck. 1990; 12:316-20.
12. Yeh CJ. Simple cryosurgical treatment for oral lesions. Int J Oral Maxillofac Surg 2000; 29:212-6.
13. Luiz AC, Hiraki KR, Lemos CA Jr, Hirota SK, Migliari DA. Treatment of painful and recurrent oral mucoceles with high potent topical corticosteroids a case report. J oral maxilla facial surg. 2008; 16(8):178-9.
14. P. J. Barnes, How corticosteroids control inflammation: quintiles Prize Lecture 2005, British Journal of Pharmacology. 2006; 148(3):245–254.
15. Baharvand M, Sabounchi S, Mortazavi H. Treatment of Labial Mucocele by Intralesional Injection of Dexamethasone: Case Series. J Dent Mater Tech 2014; 3(3):128-33.
16. Delbem AC, Cunha RF, Vieira AE, Ribeiro LL. Treatment of mucus retention phenomena in children by the micro‐marsupialization technique: Case reports. Pediatr Dent 2000; 22:155‐8.
17. Selvig KA, Biagiotti GR, Leknes KN, Wikesjo UM. Oral tissue reactions to suture materials. Int J Periodontics Restorative Dent 1998; 18:474‐87.
18. Javali R, Bhagwati B, Bhagwati S. Micro-marsupialization combined with intralesional corticosteroids to treat mucocele: A case report. J Indian Acad Oral Med Radiol 2016; 28:44-7.
19. Morton RP, Bartley JR: Simple sublingual ranulas: pathogenesis and management. J Otolaryngol 24:253-54, 1995.
20. Racey GL, Wallace WR, Cavalaris CJ, et al: Comparison of a polyglycolic-polylactic acid suture to black silk and plain catgut in human oral tissues. J Oral Surg 1978; 36:766-70.

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21.Sandrini FA, Santana‐Filho M, Rados PV. Ranula management: Suggested modifications in the micro‐marsupialization technique. J Oral Maxillofac Surg 2007; 65: 1436‐8.

Legend Figure and Table

fig 1.a fig 1.b fig 1.c

Fig 1.a- Showing Mucocele on the left side of lower lip. Fig 1.b- Injecting dexamethosone into the lesion Fig 1.c- After micro marsupialization procedure.

fig 1.d fig 1.e

Fig 1.d – Post operative pic showing complete resolution of lesion. Fig 1.e – Follow up pic after 1 year showing no signs of recurrence.

fig 2.a fig 2.b

Fig 2.a -showing Mucocele on right side of lower lip. Fig 2.b – after micro marsupialization procedure

fig 2.c fig 2.d fig 2.e

Fig 2.c – after one week follow up Fig 2.d- showing size of lesion was reduced Fig 2.e – follow up after 6 months

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fig 3.a fig 3.b fig 3.c

Fig 3.a –Pic showing Mucocele on left side of lower lip. Fig 3.b – Post op pic showing complete resolution of lesion Fig 3.c – follow up after 6 months

fig 4.a fig 4.b fig 4.c fig 4.d

Fig 4.a – Picture showing mucocele on left side of lower lip. Fig 4.b- After micro marsupialization procedure. Fig 4.c – After one week the size of lesion was reduced. Fig 4.d- Follow up after 1 year

Fig 5.a fig 5.b

Fig 5.a – Picture showing Mucocele on left side of lower lip. Fig 5.b – follow up after 6 months

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Table 1: Concise summary of Extravasation mucocele case series

Case	Age/ sex	Location	Characteristics of the lesion	Etiology	Size of the lesion	Amount of dexamethasone injected & No. of visits	Follow up	Result
1	10/F	Left side of lower lip	Soft, oval and painless	Ellis class II fracture of 21	6x6 mm	1 ml; 4 visits	1 year	Completely resolved
2	5/F	Right side of lower lip	Soft, circular & episodic fluctuation in size	idiopathic	3.5x 3.5 mm	0.5ml; 3 visits	6 months	Reduced to 1x1mm
3	6/M	Left side of lower lip	Soft, oval, sessile, and painless	Trauma during mastication	5.5x 5.5 mm	0.5ml; 3 visits	6 months	Completely resolved
4	8/M	Right side of lower lip	Oval, sessile and slightly bluish	History of lip biting	12x 11.5 mm	0.5ml; 3 visits	1 year	Completely resolved
5	13/M	Left side of lower lip	Oval, sessile & same color as that of the adjacent mucosa.	Trauma during mastication	10x 10 mm	1 ml; 4 visits	6 months	Completely resolved

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