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Management of Oral Mucocele by Intralesional Betamethasone Injection - A Study

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Abstract
Mucoceles a most common benign lesion of oral cavity due to accumulation or extravasation of mucous from minor salivary gland may cause swelling of intraoral mucosa. [1]There are several treatment option from surgical to nonsurgical approach such as chemical cautery, Electrocautery, CO_2 Laser *ablation, Cryotherapy, micromersupialization and intralesional injection of corticosteroid. In our study we found intralesional corticosteroid such as betamethasone is good as a treatment option rather to excise mucocele.*

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I. INTRODUCTION

Mucocele is a most common benign lesion of oral cavity characterized by painless, soft, smooth, round, translucentwith bluish hue elevated asymptomatic lesion. The term is derived from a latin word muco and cocele which define as a mucous filled cavity. It is classified in two types extravasation and retention type in which extravasation type results from trauma to salivary gland duct which consequences spillage of mucous to soft tissue around salivary gland and retention type is due to reduction of mucous due to blockage of salivary gland duct. Mucocele most commonly occur at lower labial mucosa followed by buccal mucosa and floor of the mouth. Superficial lesion manifest as a vesicle and deep lesions are nodular appearance.

[9]There is several treatment option such as surgical enucleation, CO_2 laser ablation, cryosurgery, micromersupialization, intralesional injection of corticosteroid or Electrocautery (Lopez-Zornet and Bermezo-Fenoll 2004, Eshida and Ramos E Silva 1998, Kopp and St-Hilaire 2004 Garcia et al 2009)Although Surgical enucleation is widely used treatment modalities for mucocele management but it has several disadvantages such as damage to adjacent ducts which h may further cause satellite lesion. The present study was undertaken to evaluate the efficacy of intralesional injection of corticosteroid such as betamethasone as a nonsurgical treatment management option in oral mucocele.

II. MATERIAL AND METHOD

A total of 10 cases from 10 to 30 years including both male and female all having euglycemic clinically diagnosed oral mucocele. Patients with having contraindication to systemic steroid injection are excluded from this study. All patients was given intralesional betamethasone 1ml (4 mg / ml) by insulin syringe at the base and periphery of the lesion every after 7 days for 5 consecutive weeks. The reading of mucocele taken on 0,7,14,21,28 days by using caliper and scale. Patients were evaluated further after 3 and 6 months interval.

III. RESULTS

Total 10 patients who has come to our OPD having clinically diagnosed Oral mucocele at lower labial mucosa from 10 to 35 years with no contraindication for taking systemic corticosteroid injection was taken for this study. All patients was taken 1 ml of intralesional Betamethasone injection one week interval till the resolution of lesion. The size of the lesion was measured in 0, 7, 14, 21, 28 days with caliper and scale.

Out of 10 cases 9 cases was completely resolved and one case will have to undergone further surgical enucleation after 5 consecutive week intralesional betamethasone injection. No post operative noted after intralesional injection in all patients.

Sl No	Location	Gender	Age	Size					Number of Injection	Result	Complication
				1st	2nd	3rd	4th	5th			
1	Lower labial mucosa	Male	32	1.2x1cm	1x1cm	.9x.7cm	.7x.5cm	.2x.1cm	5	Full resolution	nil
2	Lower labial mucosa	Male	32	1.8x1.5cm	1.5x1.2cm	1x.9cm	.6x.4cm	.2x.1cm	5	Full resolution	nil
3	Lower labial mucosa	Female	10	.9x.6cm	.5x.4cm	.1x.1cm			3	Full resolution	nil
4	Lower labial mucosa	Male	25	1.4x1cm	1.2x.8cm	.8x.4cm	.5x.3cm	.2x.1cm	5	Full rersolution	nil
5	Lower labial mucosa	Female	19	.3x.3cm	.3x.2cm	.2x.2cm	.1x.1cm		4	Full resolution	nil
6	Lower labial mucosa	Female	27	1.8x1.6cm	1.6x1.2cm	1.1x.8cm	.6x..4cm	.2x.1cm	5		nil
7	Lower labial mucosa	Female	10	1x.8cm	.8x.7cm	.5x.3cm	.2x.1cm		4	resolution	nil
8	Lower labial mucosa	Male	22	1.3x1.1cm	1.2x.9cm	.9x.5cm	.3x.2cm	.1x.1cm	5	resolution	nil
9	Lower labial mucosa	Female	30	2x1.6cm	1.8x1.4cm	1.4x1.1cm	1.3x.1.1cm	1.1x1.2cm	5	Further surgery	nil
10	Lower labial mucosa	Female	26	1.6x1.2cm	1.3x1.1cm	.9x.8cm	.4x.3cm	.2x.1cm	5	resolution	nil

IV. Discussion

Mucocele is a self-limiting cystic lesion of minor salivary gland origin in oral cavity which is bluish translucent and flactuating in nature. Incidental feature is due to any trauma such as lip biting, cheek biting or it may occur due to dilatation of duct due to sialolith.

[9]Yamasoba et al highlight two etiological factors in mucocele - traumatism and obstruction of salivary gland duct. Mucocele may appear by an extravasation or retention mechanism. Extravasation mucocele are caused by leaking of fluid from surrounding ducts or acini which is commonly found in minor salivary gland. Physical trauma may also cause leakage of salivary secretion into surrounding submucosal tissue.

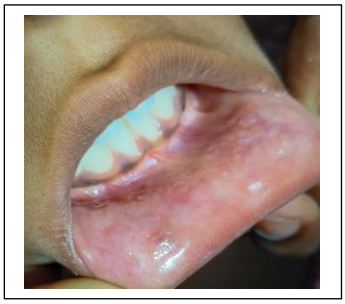
Bagan et al in a study of 25 cases showed that 5% are retention cyst and 95% were extravasation cyst. Retention type mucocele mostly occur in major salivary gland [9](Ata Ali et al 2010) due to dilatation of duct due to block by sialolith or dense of mucosa. [4]As per there proposal extravasation mucocele undergo three revolutionary process. In the first phase mucous spills diffusely into the surrounding tissue where some leucocyte and histiocytes are found. Granulomas appear during resorption phase due to histiocytes, macrophages and multinucleated giant cells associated with a foreign body reaction. In the final phase connective cells form a pseudo capsule without epithelium around the mucosa.

Retention mucoceles are formed by dilatation of duct secondary to its obstruction due to sialolith or dense mucosa. Clinically there is no difference between extravasation and retention mucocele.

In surgical point of view both types of mucocele will be treated as same manners. Conventional treatment is commonly surgical extirpation of the surrounding mucosa and glandular tissue down to the muscle layer. [6]However surgery may damage the adjacent minor salivary gland, development of new mucocele may occur. Also as surgery is a potentially invasive procedure, it may produce psychological and behavioral problems in pediatric patients, therefore some additional aids such as sedation or general anesthesia may be required. Another alternative treatment is cryosurgery which is based on rapid freezing of lesion using liquid nitrogen but there is also some disadvantages of this treatment such as postoperative oedema, irritation, and prolonged healing time. In case of large mucocele marsupialization can be done but it may also recure. Intralesional corticosteroid are the best option as it is less invasive. Intralesional steroid have some advantages over topical steroid application as it may bypass the mucosa and deliver higher concentration of steroid at site of lesion. [8]The efficacy of corticosteroid therapy is likely to attribute high potency vasoconstriction and anti-inflammatory property as it corticosteroid inhibit the expression of multiple inflammatory genes (encoding cytokines, chemokines, adhesion molecules, Inflammatory enzymes, receptor protein) and may also increase the transcription of genes coding for anti-inflammatory proteins include lipocortin-1, Interleukin -1 and Interleukin -10 receptor antagonist. [6]They also act like a sclerosing agent which may help to reduce the inflammatory process involving the pathogenesis of mucocele causing shrinkage of dilated salivary duct.

In our small group study having only 10 patients of them 6 female and 4 male from 10 to 30 years of age we noticed significant complete resolution of lesion of 9 of them without having any postoperative pain and discomfort, but only one female patient whose lesion is large in size has to undergone surgical enucleation after 5 intralesional injection for complete resolution of the case.

Before Treatment on 1st day



After final dose of betamethasone

Basic arammentarium

V. Conclusion

Mucocele has no gender predilection and it clinically found mostly in teens between 10 to 30 years of age and intralesional corticosteroid such as Betamethasone 1 ml is better treatment option.

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