



ORIGINAL RESEARCH PAPER

Dental Science

MUCOUS EXTRAVASATION CYST: A LITERATURE REVIEW AND REPORT OF A CASE

KEY WORDS: Lower lip, mucocele, mucous extravasation type, surgical excision.

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ABSTRACT

Mucocele is a common lesion of the oral mucosa that results from accumulation of saliva, as a result of obstruction or trauma to the minor salivary glands or salivary gland duct. Two histological types of mucocele exists – extravasation type and retention type. Clinically they consist of a soft, bluish and transparent cystic swelling. This report presents a 10 year old male patient having mucocele on the lower lip. Treatment performed was surgical excision along with minor salivary gland removal as he suffered difficulty in mastication & speech.

INTRODUCTION:

Mucocele is a common lesion of the oral cavity which can be defined as a swelling due to accumulation of saliva, as a result of obstruction or trauma to the salivary gland duct.¹ Mucocele is a benign cystic lesion, asymptomatic and is caused by disruption of the ducts of minor salivary glands or the presence of calculus (sialolith) inside gland ducts.² It exists as a recurrent swelling with occasional rupturing of its contents. It can persist as a fluid filled vesicle in the superficial mucosa or a fluctuant nodule deep within the connective tissue. Surface of long standing lesions may also show fibrosis.³

Most commonly the lesion is found in the inner portion of the lower lip, although they can also be found in the buccal mucosa, in the tongue and on the floor of the mouth.² Size of the lesion varies from 1 to 2 mm but do not exceed more than 1 to 2 cm in size.⁴ Color of the lesion can be either normal color of the adjacent mucosa or slightly bluish. Coloration can vary depending on the size of the lesion, proximity to the surface and upper tissue elasticity.⁵ The lesion is more common in second decade of life.

Microscopically, mucocele's present a granulomatous tissue involving a mucosal liquid content, usually mucin. If concomitant inflammation occurs, neutrophils and macrophages can be found.² There are two types of mucocele i.e. mucous extravasation type and retention type. Mucous extravasation type mucocele results from broken salivary gland duct and consequent spillage into the soft tissue around the gland whereas retention type results due to obstruction of salivary duct commonly because of a sialolith or may be due to peri ductal scar, or impinging tumor, resulting in the accumulation of saliva in the duct.¹ Mucous extravasation type is the most common type of mucocele found in the children, common site of occurrence is lower lip and tongue whereas retention type is rarely seen in children having common site of occurrence palate, cheek, floor of the mouth and cheek.¹

CASE REPORT:

A 10 year old male child reported to the Department of Pediatric and Preventive Dentistry in Inderprastha Dental College & Hospital, Ghaziabad, UP India. He came with a chief complaint of large, recurrent, painless swelling on the right side of the lower lip since 1 month (**Fig. 1**).



Fig. 1: Swelling on lower lip

The history of present illness consisted of swelling present on right side of the lower lip since 1 month. The swelling was soft in consistency, non-tender, fluctuant, compressible, non-reducible, normal in color and non-pulsatile, with no increase in temperature. Patient also had difficulty in biting. Patient had given history of reoccurrence and increase in size of the lesion from few mm to cm. A detailed history elicited from the patient showed etiology to be trauma from lip biting habit. On extra oral examination swelling was found on the right side of the lower lip making the lower lip asymmetrical. On intraoral examination a solitary, well-defined, dome-shaped swelling was seen measuring 1 cm x 1cm size on right side of the lower lip. On the basis of history and clinical examination a provisional diagnosis of mucocele was made. Routine blood investigations BT, CT, Hbs Ag, TLC, DLC were done, and the values obtained were in the normal range. The differential diagnoses were Lymphangioma, Haemangioma, Hematoma, Soft fibroma, Soft tissue abscess. The treatment planning consisted of the surgical removal of the lesion. The treatment procedure includes local infiltration was given in the lower lip with 2% lignocaine. Incision was made on the highest peak of the swelling by scalpel. (**Fig. 2**)



Fig. 2: Incision at the peak of mucocele

Bleeding was controlled with the help of sterilized absorbent gauze. Excision of the lesion was done from the base with removal of minor salivary gland duct. (**Fig. 3**)



Fig. 3: Lesion exposure for excision

Surgical site was irrigated with povidine iodine and saline solution after that interrupted sutures were placed with 3-0 silk suture.(Fig. 4)



Fig. 4: Suturing of surgical site

Postoperative instructions were given. Sutures were removed after 5 days and the healing was uneventful. Lesion was then sent for histopathological investigation. (Fig. 5)

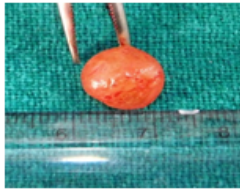


Fig. 5: Excised lesion

Histopathology: Submitted H & E stained soft tissue section shows the presence of cystic cavity enclosing eosinophilic material with minor salivary gland tissue in the vicinity.(Fig. 6)

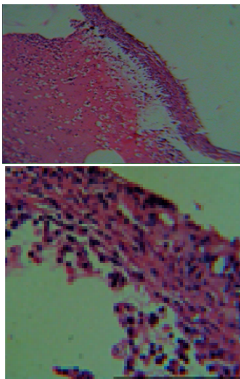


Fig. 6: Cystic cavity enclosing eosinophilic material with minor

On higher magnification presence of fibrous connective tissue with variable collagen fibrous, plump fibroblast and chronic inflammatory cells along with minor salivary glands was seen.(Fig. 7)

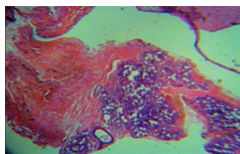


Fig. 7: Fibrous CT, fibroblast, chronic inflammatory cells, minor salivary glands

The final diagnosis was formulated on the basis of the history of the lip biting habit, clinical features and histopathological findings as a mucous extravasation type mucocele.

DISCUSSION:

The incidence of mucocele in the general population is 0.4-0.8%.⁶ Histologically, two type of mucocele exists mucous extravasation type and retention type, depending on presence or absence of epithelial lining.⁷ In children prevalence of mucous retention

phenomena is low due to inability of ductal structure to contain an exaggerated accumulation of secretion.^{8,9} Whereas as mucous extravasation is common in children because extravasated saliva is first surrounded by inflammatory cell followed by granulation tissue composed mainly of fibroblast due to absence of epithelial lining, this phenomenon is categorized as a pseudocyst or false cyst.

REVIEW OF LITERATURE ON MUCOCELE:

Literatures have reflected that oral habits such as lip biting/sucking is one of the etiologic factors for the oral lesions such as irritation fibroma and mucocele.¹⁰ Radiographic evaluation is needed to rule out if sialoliths are considered a contributing factor in the formation of oral and cervical ranulas. The fine needle aspiration cytology demonstrates the mucus retention phenomenon. The chemical analysis could disclose protein content and high amylase. The localization and determination of the origin of the lesion can be done by computed tomography scanning and magnetic resonance imaging.¹¹ Palpation can be helpful for a correct differential diagnosis. Lipomas and tumors of minor salivary glands present no fluctuation while cysts, mucocele, abscess, and hemangiomas show fluctuation.¹² Bodner L et al and Yamasoba T et al reported that 92% of mucocele found was extravasation type mucocele whereas only 8% mucocele found was retention type in children.^{11,13} When considering the site of mucocele in the oral cavity, most reviewers consider the lower lip to be the most frequently affected location (40% to 80% of all cases) which is also reported in the present case, followed by the cheek mucosa and floor of the mouth.¹⁴ Nico MM et al found 83.3% of mucocele occurs at lower lip, Wu CW et al found 89.1% whereas Joshi SR et al found 56.1% of the lesion (mucocele) occurs at the lower lip.^{15,16,17} Generally mucocele occurs more in children as compared to adult, Patel RK et al stated the mean age for occurrence of mucocele as 10-11 years, according to Dr Jones and Franklin mean age was 10.57 years, Wu CW et al found the mean age of 11.8±5.0 years, Yamasoba T et al found that most commonly occurs in children with less than 20 years of age whereas according to Nico MM et al lesion occurs at less than 15 years of age.^{4,11,16,15,18} There are many ways of treating the mucocele such as excision with a scalpel, electro surgery, cryosurgery, laser. Wu CW et al compared the reoccurrence rate with Carbon dioxide laser vaporization and surgical excision but no significant difference was found.¹⁶ Disadvantage of treating mucocele with laser is that the lesion gets destroyed and histopathological investigation is not possible. Over this it has many advantages like less bleeding, no sutures are required, saves time and therefore suitable for children.

CONCLUSION:

Mucocele are one of the most common soft tissue lesions of the oral cavity which are mainly benign and self-limiting in nature, easily diagnosed based on clinical appearance and accurate history. Most lesions have some history of trauma in that region. Simple surgical excision with care is also the treatment of choice that can relieve the patient fear and anxiety, and recurrence has been associated if the lesion excision is incomplete.

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