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MUCOCELE - A LITERATURE REVIEW AND CASE REPORT

Dental Science

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ABSTRACT

Mucoceles are one of the most common benign soft tissue lesions of the oral cavity. They are of two distinct entities based upon the histological features – mucous extravasation and mucous retention cysts. Mucoceles are most commonly seen on the lower lip due to the lip biting habit. They are soft, bluish and transparent cystic swellings which rupture spontaneously and refill leading to recurrence. This paper will enlighten us in detail about one such case of mucocele which was diagnosed and treated by surgical removal.

KEYWORDS

Mucocele, Mucous retention cysts, Mucous extravasation cyst, minor salivary glands, oral cavity

INTRODUCTION

Mucoceles (derived from Latin words *Muco* - mucous and *coele* - cavity) are mucous filled cavities which can be found in the oral cavity, appendix, gall bladder, paranasal sinuses and lacrimal sac [1,2]. The etiology of mucocele includes obstruction of the salivary gland duct leading to mucous retention cyst and traumatic injuries to the salivary gland ducts leading to mucous extravasation cyst [3]. They are characterised by a well circumscribed, transparent, bluish coloured lesions which are painless, soft in consistency and fluctuant on palpation [4,5]. The vascular congestion and the cyanosis of the tissue above and the fluid accumulation below is responsible for the bluish colour.

The size may vary from 1mm to several centimetres and affect both the genders in all the age groups with peak incidence in the second and third decades of life with a tendency of recurrence [1,3]. Mucoceles are categorised into two groups:

1. Mucous extravasation cyst which results from trauma and is associated with inflammation. The inflammation is due to stagnant mucous from extravasation.
2. Mucus retention cyst which results from obstruction of the salivary duct and is not associated with inflammation. Clinically there is no difference between the two.

Depending upon the epithelial lining - Mucoceles are differentiated as Superficial mucocele which is situated under the mucous membrane and deep mucocele situated under the upper submucosa. They are also classified as true mucous retention cysts which are lined by epithelium and pseudo or mucous extravasation cysts which are not lined by the epithelium.

The common sites of involvement include cheek, tongue, palate, floor of mouth (referred to as the ranula due to its resemblance to cheeks of the frog); the most common site being the lower labial mucosa. Mucocele may arise after minor trauma and unless treated may show an episodic decrease and increase in size based upon rupture and mucin production.

The etiopathogenesis of the extravasation cyst can be divided into three phases:

Phase 1 - Spillage of mucous from the salivary duct into the surrounding tissue

Phase 2 - Granuloma formation associated with the foreign body reaction. This is the resorption phase

Phase 3 - Pseudocapsule formation without the epithelium [7].

The lesion can be diagnosed based on the clinical findings, fluctuancy, soft consistency and mobility of the lesion. Histopathological analysis shows ductal epithelium, granulation tissue, pooling of mucin and inflammatory cells. The fine needle aspiration cytology shows the following findings for the two varieties of mucocele: Mucous extravasation type - Abundant mucosa without epithelial components and inflammatory cells. Mucous retention type - True cyst with epithelial covering

The differential diagnosis may involve salivary gland neoplasm, oral hemangioma, oral lymphangioma, lipoma, soft tissue abscess and gingival cyst in adults.A slip sign should be performed to differentiate mucocele from lipoma and a diascopy procedure to differ it from lesions of vascular origin like hemangioma.

The treatment involves conventional surgical removal. Small sized mucoceles are removed with marginal glandular tissue whereas for large sized mucoceles, marsupilization helps avoid damage to the vital structures and decreases damage to the labial branch of the mental nerve. To prevent recurrence, excision and dissection of the surrounding glandular acini down to the muscle layer should be done. Also, avoid damage to the adjacent salivary gland and the duct.

This paper presents an overview of the literature regarding mucocele and a case report on one such case which reported to the Department of Periodontics which was successfully treated without any recurrence.

CASE REPORT

A 55 year old male patient reported to the Department of Periodontics with a chief complaint of recurring swelling on the inner surface of the lower lip. Patient had a history of diabetes mellitus and was under medication (T.Glymepiride) for the same. The patient was asymptomatic one month back when he bit his lip during mastication. He developed stinging sensation and the swelling gradually increased in size. The swelling was present on that labial mucosa against teeth 32 and 33. On clinical examination the swelling was soft, solitary, well circumscribed, fluctuant, circular, palpable, painless measuring 0.5cm in diameter with a smooth, shiny surface with a bluish hue. The temperature of the overlying surface was normal and the associated lymph nodes were non-palpable[Figure 1]. The recent blood sugar reports and the hemogram were normal.

Based upon the patient history and the clinical examination, a provisional diagnosis of mucocele was arrived at. The differential diagnosis involved fibroma, lipoma and hemangioma. Treatment protocol of excisional biopsy of the lesion along with removal of the affected minor salivary gland tissue was decided. Routine blood investigations were in the normal range and a written informed consent was obtained from the patient.

Surgical procedure: Disinfection of surgical site was done with 2% Povidone iodine and prior to administration of local anaesthesia (Lignocaine HCl with 2% epinephrine 1:2,00,000). A pre-surgical rinse with 10ml of 0.12% Chlorhexidine gluconate was carried out to reduce the bacterial load. Surgical excision of the lesion was performed by placing a horizontal incision circumferentially around

the cystic lesion [Figure 2]. It was separated from the underlying mucosa and connective tissue carefully and then sutured [Figure 3],[Figure 4].

The patient was advised to apply ice pack to minimise post-operative swelling. The patient was instructed to use 0.12% Chlorhexidine gluconate mouthwash twice daily for 2 weeks and avoid injury to the operated site. Only gentle toothbrushing was permitted. Antibiotics and analgesics (Amoxicillin 500 mg TDS and Diclofenac 50 mg TDS) were prescribed for 3 days postoperatively to reduce pain and discomfort.

The excisional tissue [Figure 5] was sent for histopathological examination which depicted the tissue to be composed of minor salivary gland tissue with pooled mucinous areas and chronic inflammatory cell infiltration. Granulation tissue with proliferating and engorged blood vessels interspersed with chronic inflammatory cells and abundance of mucinophages was revealed suggestive of mucous extravasation cyst. Thus a final diagnosis of mucous extravasation type of mucocele was made.

The patient was recalled for suture removal after one week and showed uneventful healing. Oral hygiene instructions were reinforced in every single visit.

The surgical site was assessed after 7 days, 15 days, 1 month and 1 year. Healing was satisfactory in all the cases [Figure 6].

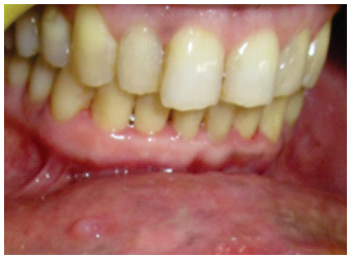

Figure 1: Pre-operative view

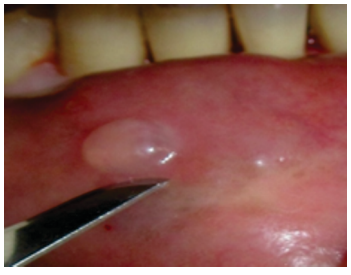

Figure 2: Incision placed circumferential to the mucocele

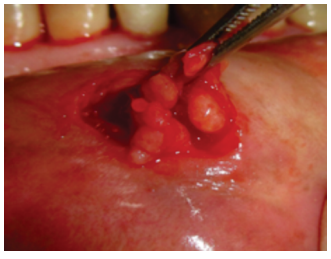

Figure 3: Resection of mucocele from the base with the associated glandular tissue to prevent recurrence

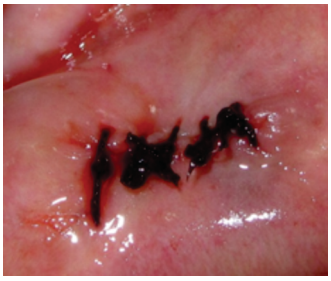

Figure 4: Direct interrupted sutures placed

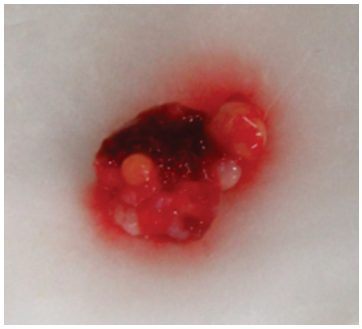

Figure 5: Excised tissue

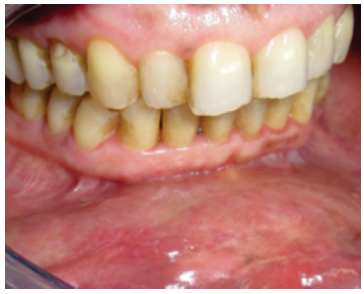

Figure 6: Post-operative view

DISCUSSION

Mucocele is the seventeenth most common benign salivary gland lesion and the second most common benign soft tissue tumour occuring in the oral cavity. The incidence of occurrence of mucocele is high about 2.5 per 1000 patients [6].

The surgical treatment of mucocele involves a simple stab incision to drain out the contents but has a high chance of recurrence. Therefore removal of the affected accessory glandular tissue should be the treatment of choice. Laser ablation, cryosurgery and electrocautery are the other suggested treatment modalities that have a conservative and non invasive approach which further avoid trauma to the adjacent minor salivary glandular tissues which could be the main cause of recurrence.

A study was performed by Bagan et al [7] on 25 patients suffering from mucoceles. 48% of the patients became aware of the lesion on screening it though it was asymptomatic whereas 48% were found by specialists by chance and 4% of the patients had some unspecified feeling of discomfort but no pain. Some studies show cryosurgery, CO2 laser and intralesional steroid injections as the mode of treatment approaches for mucocele. In a study 36 mucoceles were removed using cryosurgery and only 2 lesions reappeared [8]. Huang et al [9] performed a study on 82 patients with mucoceles on the lower lip treated by CO2 laser in which two lesions reappeared later and one patient suffered temporary paresthesia. Regarding overall recurrence rate, in one study 70 mucoceles were surgically removed from the lower lip and two lesions reappeared (2.8%) [6].

The management of mucoceles is challenging due to high recurrence rate but surgical excision with dissection and removal of minor salivary gland tissue results in clinical success with better prognosis.

CONCLUSION

Mucoceles are benign and self limiting in nature, diagnosed by clinical findings followed by definitive diagnosis based upon the histopathological investigations. The common cause for the occurrence of such lesions involves trauma and habitual lip biting. Complete excision us the easiest treatment choice and it's recurrence has been associated if the lesion is not removed completely.

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