

An Unconventional approach to mucocele excision: A case report.

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Abstract

Mucoceles are common benign cystic lesions of the oral cavity that typically appear as soft, clear /bluish painless swellings. They are commonly seen on the inner aspect of the lower lip and are most often related to a history of trauma. Conventional treatment modalities include surgical excision of the lesion along with the associated salivary gland. Newer treatment modalities like cryosurgery, electrocautery and laser ablation have been explored in recent times. Herein we discuss a newer technique to make sure complete removal of the lesion thereby ensuring prevention of recurrence.

Keywords: Oral Mucocele, surgical excision, irreversible hydrocolloid, Shira's Technique

Introduction

Mucocele are defined as mucus-filled cavities, which can appear in the oral cavity, appendix, gallbladder, paranasal sinuses, and lacrimal sac. [1&2] Derived from Latin, the word 'mucocele' literally means mucous filled cavity.[3] Mucoceles represent the 15th most common oral mucosal lesion, with a prevalence of approximately 2.4 cases per 1000 people. [4]

Although classified as common benign cystic lesions of the oral cavity, mucoceles lack an epithelial cystic wall and hence are not true "cysts" by definition. They present

as soft, fluctuant and asymptomatic swellings which may be associated to a history of trauma to the lower lip or lip biting habit. [5] Classically found in the upper submucosa, superficial mucoceles can appear anywhere in the oral cavity at the site of minor salivary glands with the lower labial mucosa being the most common site, accounting to 81.9% of the cases. Other common sites include buccal mucosa, retromolar fossa and the dorsal surface of the tongue. [5] Even so, majority of the mucoceles are diagnosed based on clinical findings and few cases are actually sent for histopathological examination, making it difficult to estimate the true incidence of mucoceles in the oral cavity.[6] Based on histological features, two subtypes can be noted. The mucous extravasation type accounts for 92% of the cases and is formed by trauma to a duct/ gland, which leads to a mucous pool surrounded by granulation tissue. The other type is known as a mucous retention cyst and accounts for the remaining 8%. [4& 7] The most effective treatment plan for mucocele is complete surgical excision of the lesion along with the cystic wall. Excision of the feeding glands is advised to prevent recurrence. Newer treatment modalities like marsupilization, cryosurgery, laser ablation etc. have also been explored in recent times. [8]

Case Report

A 22-year-old man with no significant systemic medical history, reported to the department of Dentistry in King Edward Memorial Hospital, Mumbai in September 2019 with a chief complaint of recurrent swelling on lower lip. [Figure (a)] Patient gave history of a small swelling about seven months ago, which ruptured within one week. A few weeks later patient met with a road traffic accident where he sustained a laceration of lower lip and multiple superficial abrasions on his shoulder. A week post the incident, patient noted a soft non tender swelling at the same site. The swelling has gradually increased in size to present dimensions and has not ruptured since last six months. On examination, a soft, fluctuant, non-tender swelling was noted approximately one cm in diameter on labial mucosa. The superficial mucosa appeared stretched, thin, with bluish tinge. A clinical diagnosis of mucocele was made based on history and clinical examination.

Surgical excision under local anesthesia was planned to enucleate the mucocele in toto. A vertical incision was made on the mucosa overlying the swelling and the plane of dissection was noted. During dissection, the cystic wall ruptured leading to immediate extravasation of mucous like cystic fluid. This resulted in the collapse of cystic walls; enucleation in toto was aborted at this time and Shira's technique which utilizes irreversible hydrocolloid impression material to demarcate cystic boundaries of cyst was implemented. A thin mix of alginate was slowly injected with 18-gauge needle and 10 cc syringe into the cystic cavity through the ruptured wall. This was done until all cystic fluid was extravasated and excess alginate started flowing out. After the alginate was set in the cystic cavity, dissection plane was re-established and cystic sac was excised in toto. [Figure (b)] Accessory minor salivary glands noted at the site were excised to prevent recurrence. The surgical bed was examined to assure that

no foreign body was left behind and three 3-0 vicryl sutures were placed. [Figures (c) & (d)]

The histopathological evaluation of the specimen showed fibro-collagenous cystic wall, foamy macrophages, scanty skeletal muscle fibers and benign salivary gland tissue showing mixed inflammation confirming the diagnosis of mucocele. The patient was seen at the one-week follow-up and the sutures were released. The patient did not report any complication other than mild discomfort on the day of the surgery. The site of excision appeared to be healing and was non-tender to palpation on day seven. [Figure (e)]

Figures



Figure a: Pre-operative size of oral mucocele on lower labial mucosa.

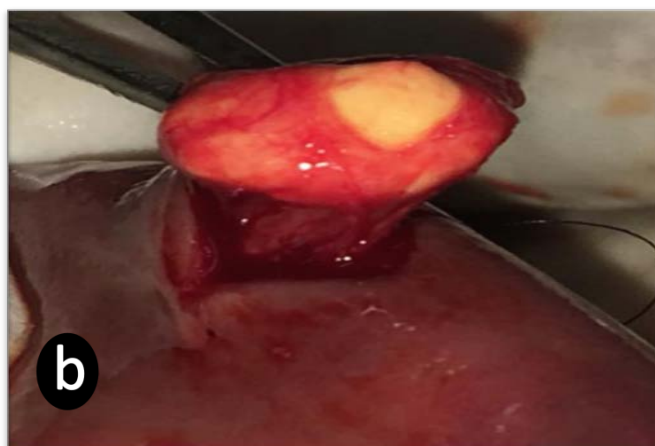


Figure (b): Mucocele cystic cavity distended with Alginate irreversible hydrocolloid impression material; dissected from surrounding tissue.



Figure (c): Empty surgical bed examined prior to closure.



Figure (d): Primary closure achieved with 3:0 Vicryl resorbable sutures.

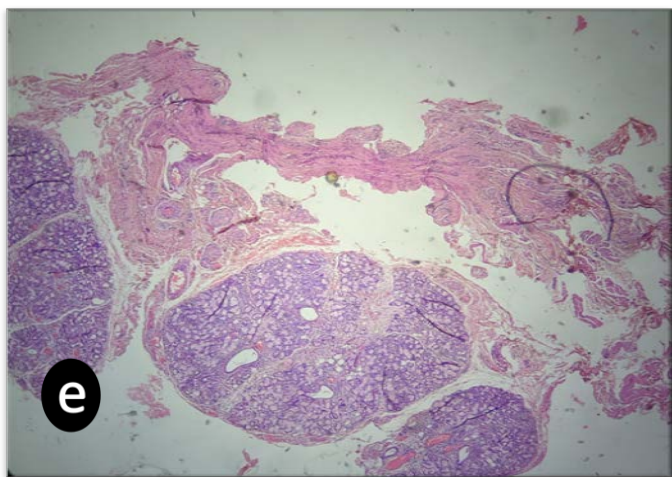


Figure (e): Histopathogram of specimen showing fibrocollagenous cystic lining and benign salivary tissue.

Discussion

Mucoceleles are common benign lesions of the oral cavity. They are normally not associated with pain or any significant morbidity; however the high incidence of recurrence can pose inconvenience like difficulty in chewing and/or speaking to the patients. [1] Mucoceleles are most commonly diagnosed clinically. The pathognomic features include a history of trauma, rapid onset, recurrent, fluid filled, fluctuant swelling showing a bluish tinge and presence of mucous on aspiration of cystic contents. [9] Definitive treatment involves excision of cyst along with associated salivary gland. [10] Traditionally, smaller lesions are excised surgically while larger lesions may advocate the use of modalities like cryosurgery, laser ablation, electrocautery, micro-marsupialization and steroid injection. [11-15]

In our clinical case, the mucocele was seen on lower labial mucosa close to the vermillion border, placing it in the aesthetic region. The patient also gave a history of rupture of the swelling, which recurred within a week. Hence we decided to surgically excise the mucocele, upto the muscle layer and remove any attached salivary glands. Surgical excision was chosen over other treatment modalities as it is fairly inexpensive and does not require any specialized equipment. It can be performed easily by a trained clinician and avoids any form of thermal injury to the tissues surrounding the lesion; commonly seen with lasers and electrocautery. We planned to take vertical incision on the swelling to explore the extent of the mucocele and not to excise the lesion along with overlying labial mucosa in order to prevent any ulcerative appearance, unsightly scar or defect on the lip. With the achievement of primary closure, we could also ensure minimum postoperative discomfort to the patient and rapid healing. However due the increased risk of rupture of the mucocele using this method, sterile equipment and

irreversible hydrocolloid material was arranged to be used if the cystic walls collapses. Shira in 1969, advocated the use of a technique involving aspiration of the cystic contents of the mucocele, followed by injection of irreversible hydrocolloid material to distend the lesion. [16] This delineated the lesion from the surrounding normal tissue making dissection possible, even after the cyst ruptured and its walls collapsed. Alginate, agar, paraffin, fibrin glue and ribbon gauze are some of the aids used to distend the cystic cavity in literature. [17]

When the mucocele ruptured during the course of dissection, we resorted to Shira's technique. [16] We chose to use irreversible hydrocolloid impression material as it was readily available in the dental setup, it is fairly inert and our team of dental surgeons is well versed with the manipulation of the material. A new, pre-weighed, single use sachet of alginate was mixed with distilled water with sterile equipment to maintain asepsis. A thin mix of this alginate was injected into the lesion through the ruptured wall, till the cyst was completely distended. Once the material was set, the cystic lining was dissected intact and was excised along with the attached salivary gland tissue. No Foreign body reaction or recurrence was noted. Incomplete excision of the cystic lining or any residual salivary tissue may attribute to recurrence of the lesion.

With this technique, it is important that the surgical bed is examined to ensure no impression material is left behind to avoid a foreign body reaction and/or infection into the surrounding tissues. Such complications have been reported in the past and may be more dangerous when the lesions extend into facial spaces and deep tissue planes. [16-19]

Conclusion

The use of irreversible hydrocolloid material to delineate the boundaries of the mucocele is a safe and economical

technique that improves visual access during surgery to ensure complete removal and minimizing chances of recurrence. However like any other technique, precautions must be taken to maintain sterility and extra caution must be exercised in sites where the lesion is in close approximation to vital structures and/or extension into facial planes/ spaces is likely.

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