



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 8.4
IJAR 2022; 8(10): 91-93
www.allresearchjournal.com
Received: 15-07-2022
Accepted: 20-08-2022

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Mucocele of lower lip: A case report with a mini literature review

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Abstract

Mucocele refer to mucous filled cystic cavities that manifest as one of the most common benign soft tissue masses occurring in the oral cavity. They occur due to trauma to the main duct of minor salivary glands with subsequent spillage of the mucous into the surrounding tissues or due to blockage of the salivary ductal system resulting in retention of the mucous fluid. They present as small, discrete, soft, translucent, single or multiple sessile or pedunculated masses with color ranging from pink to deep blue. The lesions may undergo spontaneous rupture with the liberation of the fluid content, however, may recur with accumulation of additional fluid. Here we present a case of mucocele of lower lip associated with lip biting habit which was surgically treated, histopathologically confirmed and followed up for 6 months with no recurrence of the lesion.

Keywords: Mucocele, extravasation cyst, minor salivary glands, feeder glands, mucin pooling

Introduction

The term mucocele is of Latin origin wherein “*muco*” refers to mucous and “*cele*” refers to cavity^[1]. These lesions occur frequently during second and third decades of life without any sex predilection. These lesions can occur in the oral cavity, gall bladder, paranasal sinuses, and lacrimal sac^[2]. In the oral cavity, common sites of occurrence include lower lip lateral to midline, floor of the mouth, ventral surface of tongue, buccal mucosa, palate and retromolar pad^[3]. These lesions can be of two types: i) extravasation and ii) retention type. Extravasation cysts occur due to trauma to the duct of the gland with subsequent spillage of the mucin into the surrounding tissue and do not have an epithelial lining while retention cysts occur due to absence of glandular secretion by blockage of the ducts and present an epithelial lining.^[4] The lesions often present a bluish hue due to vascular congestion and cyanosis. However, some of the lesions may appear pink in color. Coloration depends on factors such as size, depth of the lesion and elasticity of the overlying tissues. The lesions may subside with liberation of the viscous fluid however, may recur within weeks due to additional fluid accumulation and cause significant discomfort to the patient. Here we present a case of mucocele which had recurred after spontaneous healing and was surgically treated with satisfactory healing observed for 6 months.

Case report

An 8 year old male patient reported with complaint of swelling and pain in his lower lip since 1 month which was causing discomfort during mastication. The swelling had begun as a small mass that had gradually increased in size to reach the present state. The patient also reported that a similar lesion had occurred in the same site 3 months ago that had underwent spontaneous remission but had recurred after few weeks. He gave history of lip biting habit for almost 2 years. On examination there was a solitary, pink, well circumscribed, ovoid lesion measuring around 0.5cm x 0.5 cm in the lower labial mucosa in relation to 32 & 73 (figure 1). On palpation, the lesion was soft, fluctuant, tender with a smooth surface. The overlying temperature was normal and no regional lymph nodes were palpable. After routine hematological investigations, excisional biopsy of the lesion was planned. The area was anaesthetized and an incision was placed directly over the lesion to expose the underlying mass. It was slowly detached from the surrounding tissues after which associated minor salivary glands and a duct were observed.

They were also removed to prevent recurrence of the lesion (figure 2). Interrupted sutures were placed (figure 3) which were removed after a week. The excised mass was preserved in 10% formalin was sent for histopathological examination. Histopathological examination revealed the presence of glandular tissue lined with acinar cells. Dilated and engorged blood vessels were observed along with areas of mucin pooling and fibrosis. The adjacent tissue was densely infiltrated with macrophages and scathy lymphocytes. No epithelial lining was present thus substantiating it as a case of mucous extravasation cyst (figure 4). The patient was reviewed after 1 week (figure 5) and was counseled for cessation of lip biting. He was followed up for every one month for upto 6 month duration (figure 6). Results were satisfactory and no recurrence was observed.

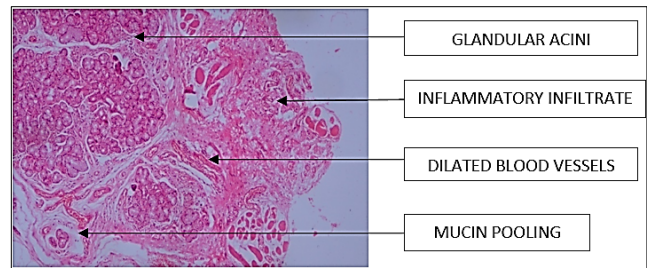


Fig 4: Histopathological image showing glandular tissue with mucin pooling and fibrosis. No epithelium lining is seen

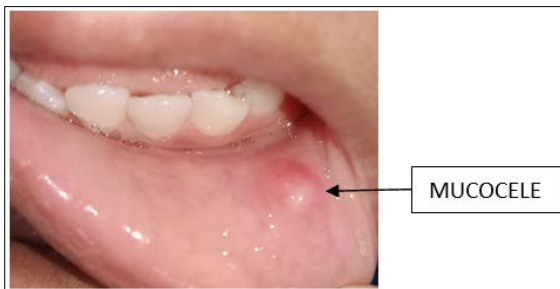


Fig 1: Mucocele present in lower labial mucosa in relation to 32, 73 regions



Fig 5: 1 week post operative view



Fig 2: Excised mass along with minor salivary glands



Fig 6: 6 Month post operative view



Fig 3: Interrupted sutures placed

Discussion

Mucoceles are the most common type of cyst occurring within the oral tissues with incidence rate of 0.4% to 0.9% [1]. Superficial mucoceles can occur in association with lichen planus and lichenoid disorders [5]. There are incidences wherein multiple mucoceles were reported such as that reported by Abe *et al.* (2019) [6]. Etiological factors could be either traumatic or due to ductal obstruction. Traumatic factors include parafunctional habits (lip biting), severance of the feeder duct and trauma resulting in damage to the acinar cells. Ductal obstruction could be due to a sialolith, ductal hypoplasia, periductal fibrosis and tumor and are more commonly associated with major salivary glands. Differential diagnoses include fibromas, lipoma and hemangiona. Clinically mucoceles show fluctuation while lipomas and salivary gland tumors do not. However drained mucoceles and chronic mucoceles undergoing fibrosis may not fluctuate [8]. Hence a histopathological analysis is crucial to establish the diagnosis. Histopathologically, mucoceles can be classified as extravasation type and (b) retention type. Extravasation cysts do not have a defined cyst wall

and the connective tissue shows a dense inflammatory reaction surrounding a reactive granulation tissue. Retention cysts possess an epithelial lining lined by cuboidal or flat cells derived from the excretory duct of the feeder glands and do not show any inflammatory reaction^[9]. In children extravasation cysts are more prevalent than retention variant owing to constant trauma to the mucous carrying ducts and its extravasation. Studies conducted by Hoque *et al.* (1998) and Azuma *et al.* (1995) have revealed elevated levels of TNF- α , MMPs, type IV collagenases, plasminogen activators in the extravasation mucocele thus contributing to the invasive character of the extravasated mucous^[9, 10]. Final diagnosis should be made on the basis of history of trauma, including habit of lip biting, location, clinical features and histopathological confirmation. Treatment of choice is surgical excision which can be achieved through scalpel excision, marsupialization, laser ablation, cryosurgery, electrocautery. The lesion has a recurrence rate of around 7%. This can be prevented by excising the lesion along with the adjacent glandular tissue down to the muscular layer. Care should also be taken to avoid injury to adjacent glands and ducts while placing sutures as this may also lead to recurrence of the lesion.

Conclusion

Mucoceles are among the most common soft tissue lesions occurring in the oral cavity. Majority of the lesions can be diagnosed clinically however at times; biopsy is required to ascertain it. Although the lesions resolve spontaneously, surgical intervention might be required as in this case because the patient had consistently been biting his lip. The dentist should advice the patient regarding the treatment procedure followed by cessation of lip biting habit for successful outcomes.

Declaration of patient consent

The authors hereby certify that appropriate consent was obtained from the patient's parent for use of his images and clinical information to be reported to the journal. They were assured that the name, initials, identity of the patient will not be revealed.

Acknowledgement

We would like to thank Ms. S Subha, pathologist for her precious contribution with the histopathological analysis.

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