Mucocele – A case series

Abstract:

Mucoceles arises from mucous secretion accumulation due to trauma or lip biting habits, or minor salivary gland alterations. Histologically categorized into extravasation and retention types, they can manifest in various oral regions, although they predominantly occur in the lips. Treatment modalities include surgical excision, marsupialization, cryosurgery, steroid injections and CO2 laser. The surgical excision performed in this study yielded favorable outcomes, as described in medical literature .Follow-up assessments revealed no recurrence rates and any other complications. Understanding the characteristicsis of oral mucocele is essential for accurate diagnosis and effective management.

Material and methods: A series of 6 cases of oral mucocele were selected randomly which reported to Department of Oral and Maxillofacial Surgery in Punjab Government Dental College and Hospital, Amritsar. All cases were treated by surgical procedure with excision of the lesion along with minor salivary glands and underwent 6 month follow-up.

Results: All documented cases of mucocele were localized on the lower lip. Among the six cases, four patients exhibited lesions on the left side, while two patients presented with lesions on the right lower lip. Gender distribution showed that four of the cases were males, while two were females. Follow-up assessments at 3 months and 6 months interval showed no recurrence of mucocele.

Conclusion: In conclusion, the surgical approach, combined with the removal of affected minor salivary glands, emerges as one of the most effective techniques for managing mucoceles.

Key-words: .....

Introduction:

Mucocele is a common lesion of the oral mucosa arising from an alteration of duct of minor salivary glands due to the mucous accumulation. Mucocele involves mucin accumulation causing swelling[1]. The swelling is usually caused by local trauma leading to obstruction of the salivary gland ducts. Based on the causes, two types of mucoceles exist – retention and extravasation. Retention mucoceles develop when glandular secretion is reduced or blocked within the ducts . Extravasation mucoceles occur when a salivary gland duct ruptures, causing saliva to spill into surrounding soft tissues.[2]. These extravasation mucoceles progress through three evolutionary phases. Initially, mucus spills diffusely from the excretory duct into the connective tissues. In the subsequent phase, i.e., resorption phase, because of foreign body reaction, formation of granuloma occurs. In the final phase, there is formation of pseudocapsule (without epithelial lining) around the mucosa.[6] The primary causes of extravasation mucoceles in the lower labial mucosa are local trauma, habitual biting, or a combination of both.[3].

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Extravasation mucoceles commonly occur in the lower lip, as lower lip is more susceptible to accidental trauma or nibbling and suction habits. Presence of the lesion in young patients, and the rare presence of calculi in the minor salivary glands support this etiopathogenic theory . Clinically, mucocele presents as bluish and transparent cystic swelling which frequently resolves spontaneously(4).

The cause for blue colour is vascular congestion and cyanosis of the overlying mucosa .(7) The variation in color depends on the size of the lesion, proximity to the surface and overlying

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tissue elasticity.However, once the mucocele is fibrosed due to repeated trauma, its clinical appearance changes.[8]

Numerous therapeutic approaches have been outlined in the medical literature, including surgical excision with a scalpel, carbon dioxide ablation, laser excision,laser vaporization , marsupialization, and cryosurgery[5].

This article describes a case series of 6 patients of mucocele on lower lip treated successfully by surgical excision method using scalpel blade.

Materials and methods:

For this study, 6 patients who visited the Department of Oral and Maxillofacial Surgery in Punjab Government Dental College and Hospital, Amritsar with chief complaint of fluid filled swelling on lower lip were selected. Complete history was recorded and clinical examination was performed.

In addition, we noted whether there was a known history of trauma, any periodic rupture, or the presence of multiple concurrent lesions. The mucoceles were excised with conventional surgery along with the associated minor salivary glands followed by primary closure using 3-0 silk suture. The samples were sent for histopathological examination and after seven days patients were recalled for suture removal .The cases were followed-up and evaluated for 3-6 months. The parameters checked at follow-ups were recurrence, pain and any surgical scars. Here we are presenting 2 case reports in details from diagnosis to the treatment done . Similar procedure was followed in the rest of the 4 cases also.

Case report 1:

A 17 year old male patient reported with chief complaint of swelling on lower lip since 3 months . Swelling was small initially and then was increasing gradually to attain the present size. Patient gave history of lip biting and difficulty while chewing .There was no relevant medical history.

On intraoral examination, a round, solitary dome shaped swelling was present on the labial mucosa of the lower lip on left side extending inferiorly toward the vestibule, measuring approximately 5-6mm. [Figure 1a]. No other oral anomalies were detected..

The lesion was diagnosed as a mucocele based on the clinical features and history of lip biting habit. It was excised under local anesthesia using scalpel [Figure 1b] and the excised lesion was sent for histological analysis [Figure 1c]. Interupted sutures were placed [Figure 1d], and suture removal was done after 1 week. Histopathological report confirmed the diagnosis as mucocele .On 6 month follow-up, there was no history of recurrence of the lesion.

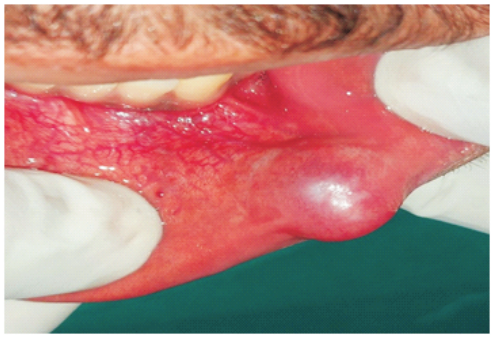

Fig. 1a – Mucocele on lower lip

Fig. 1b – surgical excision of mucocele

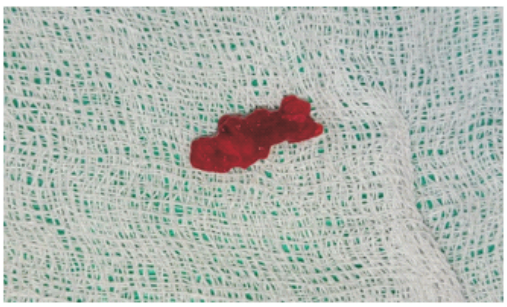

Fig.1c Excised minor salivary gland

Fig. 1c Primary closure done with 3-0 silk

Fig.1c Healing after 6 months of follow-up

Case report-2:

22 year old male patient presented with a chief complaint of swelling on the right side of his lower lip persisting for one month. The history of present illness consisted of swelling on the labial mucosal of lower lip with respect to left lateral incisor since 1month. A detailed history showed etiology of trauma 1 month back. Examination of the swelling appeared to be single ,oval-shaped, soft and fluctuant . The swelling exhibited a light blue discoloration and was devoid of any accompanying symptoms

The lesion was approximately 1.5 cm in diameter(Fig. 2a). The patient did not have any difficulty in speaking or chewing, his only concern was its repeated occurrence. Lesion was resected from the base including associated minor salivary gland and sent for histological analysis [Figure 2f]. Intermittent sutures were placed [Figure 2e], and suture removal was done after 1 week

Histopathological report confirmed the diagnosis as mucocele. During the 6-month follow-up, there were no reported instances of recurrence.

The parameters checked at follow-ups were recurrence, pain and any surgical scars.

Histopathological examination revealed lobules of salivary gland acini with ducts and central cystic cavities surrounded by inflammatory infilterate in the underlying stroma which is indicative of retention type mucocele .

FIG.2a –lower lip mucocele

FIG.2b Incision given on mucocele

FIG.2d Surgical area after mucocele resection

FIG.2clesion on surgical exposure

Fig 2e – Sutures placed

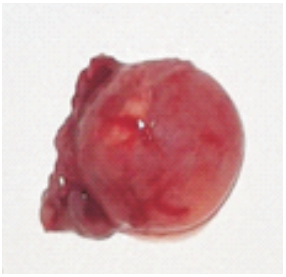

Fig 2f – Excised lesion

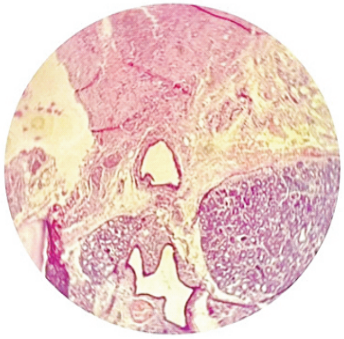

Fig 2g-Histopathological feature of mucocele showing salivary acini(A) and salivary duct(B) with mucin and inflammatory cells ©.

Results:

Observationally, all documented cases of mucocele were localized on the lower lip. Among the six cases, four patients exhibited lesions on the left side, while two patients presented with lesions on the right lower lip. The age group ranged from 17 to 32 years.Gender distribution showed that four of the cases were males, while two were females. The causative factors of the lesions were lip biting and trauma, each responsible for an equal number of cases.

Discussion:

A mucocele, clinically defined as a swelling, arising from the pooling of saliva due to either a severed or obstructed duct of a minor salivary gland. They are self-limiting cysts containing mucous from salivary glands, frequently found in the oral cavity. They typically manifest with a relatively rapid onset and variable size, which may decrease due to spontaneous rupture followed by mucin accumulation, or re-absorption of saliva deposits, potentially leading to lesion reformation.[9]

Diagnosis primarily relies on clinical examination, with the appearance of mucoceles being pathognomonic. Important factors such as the lesion's location, history of trauma, rapid onset, fluctuation , bluish transparent colouration, and consistency are crucial considerations in reaching a final diagnosis.[10]

Numerous therapeutic approaches have been outlined in the medical literature, including surgical excision with a scalpel, carbon dioxide ablation, laser excision,laser vaporization , marsupialization, and cryosurgery[5]. Treatment recommendations advocate for surgical excision coupled with the removal of the affected accessory salivary gland. Marsupialization is discouraged due to its association with higher recurrence rates.

Conventional treatment is commonly surgical extirpation of the surrounding mucosa and glandular tissue down to the muscle layer. With a simple incision of the mucocele the content would drain out but the lesion would reappear as soon as the wound heals.[1]

Histological examination confirmed all cases as extravasation mucoceles. During follow-up period of 6 months no recurrence was reported in all of the 6 treated cases. None of the patients experienced complications such as pain, paresthesia, or surgical scarring during the entire follow-up period.

Conventional surgical excision involves meticulous resection of the mucocele, ensuring complete removal of both the affected gland and adjacent tissue to minimize the risk of recurrence . Careful suturing of the surgical wound is essential to prevent damage to surrounding glands or ducts and its recurrence. Additionally, precautions must be taken to avoid the rupture of the mucocele, as leakage of its contents may cause soft tissue collapse, hindering precise resection and resulting in incomplete removal of the affected minor salivary gland. The primary finding of this study was the remarkably low recurrence rate of mucoceles following complete surgical excision along with the affected minor salivary glands upto the muscle layer. During the 6-month follow-up period, there were no recurrences or other postoperative complications.The surgical wounds exhibited normal epithelialization, without any aesthetic defects or fibrous scars.

Conclusion:

Although various treatment modalities like surgical excision, cryosurgery, CO_2 laser ablation, diode laser, electrocautery, marsupialization, and conservative micromarsupialization have been described in medical literature but the conventional surgical approach combined with the removal of affected minor salivary gland emerges as one of the most effective technique for managing mucoceles .There was excellent outcomes with no recurrence of the lesion during the follow up period of 6 months in all of the 6 cases treated by this technique in our study.

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