CASE REPORT

Cryotherapy for Treatment of Mouth Mucocele

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ABSTRACT

A mucocele is a common salivary gland disorder that most commonly affects young adults. A 35-year-old female patient reported to the Department of Oral and Maxillofacial Surgery, with the chief complaint of swelling on the left side of floor of mouth. The aim of this case report is to present the management of mucocele present in floor of the mouth in a young female patient using liquid nitrogen cryosurgery. The present case report has also discussed mechanism of action, current protocol of cryosurgery with emphasis on clinical pros and cons along with the clinical outcomes.

KEYWORDS: Cryotherapy, liquid nitrogen, mucocele, ranula

INTRODUCTION

Mucocele is a common salivary gland disorder which is defined as a mucus filling cyst that usually appears in the oral cavity, paranasal sinuses, or lacrimal sac.[1,2] The term mucocele is derived from a Latin word, mucus and cocele meaning cavity.[3] It is the 17th most common salivary gland lesion seen in the oral cavity.[4] Clinically, mucoceles are of two types (a) extravasation and (b) retention type. Extravasation cyst is usually seen in minor salivary glands and forms due to leakage of fluids from the salivary gland ducts and acini into the surrounding soft tissue, whereas retention type cyst results from obstruction of salivary gland duct and hence is commonly found in ducts of major salivary glands.[5] However, clinically, there is no difference in the two cyst types.

Size of the retention type variant varies from few mm to few cm. Furthermore, it occurs singly and is rarely present bilaterally.[6] It is an asymptomatic, soft, and fluctuant swelling with rapid onset which frequently resolves on its own.[7,8] It is common in the first three decades of life. Diagnosis of mucocele is pathognomonic so the data about the lesion, location, history of trauma, rapid appearance, variation in size, bluish color, and consistency help in diagnosis of such lesion.[9-11]

There are several treatment modalities, both surgical and nonsurgical for the treatment of mucocele, of which conventional surgical excision is commonly followed. An alternative treatment for many lesions of the skin and oral cavity including mucoceles is cryosurgery. Cryosurgery is an effective, well-aimed, controlled destruction of diseased tissue by application of cold.[12,13] It is a well-tolerated procedure which produces excellent results and can be easily performed in the office setting. Considering the fact that biopsy before mucocele surgery may compromise the final results for diagnoses, cryotherapy should be done in such cases.[14]

CASE REPORT

A 35-year-old female patient reported to the Department of Oral and Maxillofacial Surgery, with the chief complaint of swelling on the left side of the floor of mouth adjacent to tooth number 36. The swelling was present for the past 3 months. Past medical, dental, and family history were not contributory. On clinical examination, the lesion appeared as a single, well-circumscribed swelling of half an inch in size [Figure 1]. It was painful on palpation, flaccid in consistency with clearly defined limits and a smooth surface.

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A signed informed consent was taken from the patient for the surgical intervention. Considering her apprehension and treatment benefits, cryosurgery was performed. Local anesthesia (2% xylocaine, 1:80,000 adrenaline) was given to anesthetize the surrounding structures. A closed system consisting of a cryoprobe and nitrous oxide gas was used. Nitrous oxide was released from a high pressure inside the cryotip which was placed directly on the lesion [Figure 2]. The lesion was exposed directly to three consecutive “freeze-thaw cycles” and each cycle lasted for 5–10 s. The cryoprobe was moved from the center of the lesion to the borders until the lesion appeared white and frozen, resembling an ice ball. Figures 3-5 show the appearance of the lesion immediately after treatment, at 1 week follow-up, and at 3 months follow-up, respectively.

**DISCUSSION**

Mucocele is a salivary gland disorder and also the second most commonly occurring soft-tissue tumor of the oral cavity. Although frequently found in lower lip, it may occur in other locations also. Mechanical and physical trauma such as aggressive tooth brushing and lip biting habits are the main causes for occurrence of such lesions. These lesions are devoid of epithelial lining and are also termed as superficial mucocele and/or classical mucocele. Surgical excision, marsupialization, micro-marsupialization,
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Moreover, cryotherapy carries discomfort, bloodless surgical site, minimal to zero scarring, and excellent cosmetic results. Moreover, cryotherapy carries the advantage of usefulness in candidates in whom surgery is contraindicated owing to any reason. Furthermore, this therapy is localized in action and can be repeated without any permanent side effects.\(^{23,26}\) On the other hand, cryosurgery has certain disadvantages such as unpredictable degree of swelling, lack of precision of depth in area of freezing, slight degree of necrosis, and sloughing which results in delayed healing which can be a bit problematic.\(^{25}\)

**Conclusion**

Mucoceles are common, self-limiting benign lesions resulting from extrinsic and/or self-inflicted trauma. Since these lesions are usually painless, hence they go unnoticed by the person himself/herself. Majority of such cases are identified by the dentists when the patient comes for either routine dental checkups or other unrelated dental problems. There are various treatment options available, but cryosurgery is a valuable treatment of choice pertaining to reduced pain and less recurrence rate.

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**Conflicts of interest**

There are no conflicts of interest.

**References**