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Micro-marsupialization of mucocele in a pediatric patient: A case report

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Abstract

Most common lesions seen in children are mucoceles. However, treating these lesions in small children is a complicated task as they do not cooperate during surgical procedures. Various techniques have been described for the treatment of mucocele; but most of these procedures are invasive. Also, procedures from wide excision with scalpel to laser are associated with few complications. Micro-marsupialization is a minimally invasive technique for the management of mucocele, especially in the pediatric age group. Since, it is easy to accomplish with minimum armamentarium and can be performed under topical anesthesia with low incidence of complications. The current case report describes the successful management of mucocele by micro-marsupialization in a pediatric patient.

Keywords: Mucocele, micro-marsupialization, minimally invasive technique

Introduction

Mucocele is a common oral mucosal lesion that occurs more frequently in children and adolescents, which originates from the minor salivary glands [1]. These lesion resulting from either trauma or change in the drainage system of the salivary glands resulting in mucous accumulation. These lesions are benign, generally painless, depending on the location, can cause discomfort and create trouble, especially in pediatric population. Lesions are most commonly affected with equal gender predilection and with a clinical history of a painless swelling. However, lesions are often recurrent in nature that may present for months or even years before the patient seek treatment. According to the microscopic features, oral mucoceles can be classified as “mucus retention”, which occurs due to ductal obstruction with subsequent retention of saliva within the ducts, whereas “extravasation” occurs due to trauma to the salivary duct and pooling of mucus into the connective tissue [2].

The definitive treatment consists of surgical removal of the lesion along with the affected minor salivary glands. However, different techniques have been used to manage oral mucoceles; such as marsupialization, micro-marsupialization, incision and drainage, sclerotherapy with OK-432 (Picibanil, an immunotherapy agent), laser excision, cryosurgery, electro surgery or even with no treatment [3-5]. Micro-marsupialization is a minimally invasive procedure given by Morton and Bartley for management of ranula [6]. It has been recognized as a simple and low cost treatment option, which does not require infiltration of local anesthesia and is well-tolerated by pediatric patients. Micro-marsupialization [2, 6], involves the placement of a single suture which is passed internally through the lesion along with its widest diameter. This procedure is especially recommended for adults, who have systemic conditions, individuals with contraindications for surgical procedures, and young children in which behaviour modification is required [7, 8].

Thus, this paper presents a report of oral mucocele in a 7 year-old child that was successfully managed using a micro-marsupialization procedure.

Case report

A 7-year-old girl presented at our pediatric dental facility with a chief complaint of painless swelling on the inner aspect of right lower lip region for 3 weeks.

The medical history was non-contributory; however, the patient gave a positive history of lip biting since for year. General examination did not reveal any abnormality. On intraoral examination, swelling was present on 2-3mm below vermilion border of right lower lip region with a bluish translucent hue, which was approximately 1×1 cm in diameter with round to oval shape. (Figure 1) The swelling was non-tender, soft to the touch and non-compressible. No secondary alterations such as ulceration, fistula formation, infection or discharge were observed. Based upon the signs and symptoms, a clinical diagnosis of oral mucocoele of the lower lip was made. The area was disinfected with a 0.1% povidone iodine solution and a topical anesthetic gel was applied over the entire surface of the lesion for approximately 3 minutes. Single interrupted suture was placed bypassing number 3.0

silk suture material from one side of the lesion to the other and surgical knot was tied, leaving space between the knot and the lesion (Figure 2). The patient was advised to apply 0.5% chlorhexidine gel for 7 days post-operatively to prevent any secondary infection. The patient was recalled after 7 days for the suture removal. In the event of loss of the suture, the patient was instructed to visit the operating pediatric dentist immediately.

In the present case, the sutures were maintained for 7 days, by which mucocoele was compressed, epithelization was seen and complete healing had occurred. The patient was told to return if there were any signs of recurrence. The patient was followed up every 3 months. No recurrence has been reported in the six-month post-surgery (Figure 3).



Fig 1: Mucocoele on the lower right lip



Fig 2: Suture passed from one side of the lesion to the other



Fig 3: Post-operative photograph shows good healing after 6 months

Discussion

Mucocoeles are common oral pathological condition in with the prevalence of 2.5 lesions/1000 populations^[9]. Typically it is not considered a clinical problem, however sometimes it becomes alarming to the parents when seen in children^[10]. The lesions are rarely seen in infants and neonates and can appear at any site of oral mucosa, where salivary glands are present^[9].

The diagnosis of oral mucocoele is mainly made according to its clinical features and appearance. Its location, history of trauma, history of lip biting habit, rapid appearance, variations in size, bluish-colour and consistency is some of the important factors that should be considered before making any positive diagnosis. On palpation, the lesion is often fluctuating^[11]. Different treatment approaches have been proposed in literature such as surgical excision of the lesion with or without associated salivary gland, marsupialization, electrosurgery, cryosurgery, laser excision, high-potency topical corticosteroids, gamma-linolenic acid, OK-432, nickel gluconate-mercurius heel-potentized swine organ preparations and micro-marsupialization^[9].

In 1995, Morton and Bartley⁶ recommended the placement of a silk suture in the dome of the ranula. Later, in 2000, Delbem *et al.*,^[2] used the micro-marsupialization technique which comprised of draining the accumulated saliva by passing and maintaining a single 4.0 silk suture through the internal part of the lesion along its widest diameter for 7 days. This will help to create a new epithelialized tract along the path of the suture. The technique is minimally invasive, quick and can be done under topical anesthesia. The procedure hardly takes 3 minutes, causes no tissue damage or inflammation, and is particularly suitable for young children who cannot tolerate long or invasive procedures and patients whose cooperation is difficult to achieve^[2]. The use of micro-marsupialization technique for mucocoeles has been limited. However, we preferred this technique in the present case as per patient's age, physical and emotional status and fear of infiltrative anesthesia. Piazzetta *et al.*,^[12] observed that children would find it challenging to keep the suture in place for a long period of time and would be also more likely to cause discomfort and secondary infections due to inadequate oral hygiene practice. However, in the present case the sutures were maintained for 7 days with uneventful healing.

In the present case no post-operative discomfort was experienced by the paediatric patient, and no recurrence was observed even after 12 months of surgery. The minimal need of post-operative care make this technique a good treatment option for the management of mucoceles, particularly in pediatric patients. The only disadvantage may be that micro-marsupialization does not allow a biopsy to be conducted, and the diagnosis remains totally clinical^[12]. Moreover, it should be carefully used in palatal or buccal lesions, as minor salivary gland tumors are often located in those areas and can be wrongly diagnosed as mucoceles.

Conclusion

Micro-marsupialization might be a treatment option for children as well as in adolescents with mucoceles. This method is simple to execute, minimally invasive, requires no local anesthesia, and has a less postoperative complications rate, and is well tolerated by patients.

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