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THE USE OF MICROMARSUPIALIZATION TECHNIQUE IN THE TREATMENT OF MUCOCELE IN THE LOWER LIP: CASE REPORT

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ABSTRACT

Objective: The objective of this case report is to report a treatment for mucocele in which a micromarsupialization technique was used. Methodology: This work is a case report, from which it is evident the need to use another existing and published work as a basis for the construction of this report, since it is extremely necessary to use a correct and appropriate methodology and structure for this type of article. Thus, the study by Yin (2001) was used to serve as a guide on how this report should be structured, which approach to use, structuring and division of topics, how searches for other articles should be carried out to enrich the article with scientific foundations, what should be included in this study and what should not be included. To this end, searches were carried out in the following databases: Scielo, PUBMED Central, Web of Science, BVS/BIREME, PROSPERO in conjunction with Google Academy. Results: During the search process for other studies and case reports in order to enrich this work, it became evident that the best current form of treatment for mucocele is through micromarsupialization. Conclusion: Thus, it became evident that the micromarsupialization technique is highly effective in the treatment of mucocele, which presents a good immediate result after the use of the technique and is effective in the treatment of mucocele as presented in the report.

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Keywords: Mucocele. Micromarsupialization. Dental Care.

INTRODUCTION

Within the oral cavity there are several salivary glands, divided into minor and major salivary glands. In the major salivary glands we have the parotid, submandibular and sublingual, while in the major ones we have the buccal, lingual, labial, palatine, pharyngeal and tonsillar glands (Aldred & McCulloch, 2016). Thus, mucocele is a benign lesion that affects the oral cavity, in which the involvement of a minor salivary gland and its respective ducts occurs, and can be classified into two different types: mucus extravasation phenomenon and mucus retention cyst (Santos et al., 2024; Harrison, 1975). In most cases, mucoceles originate in the lower lip. Studies show that approximately 75 to 80 percent occur in this region, although they can also occur in other regions, such as the soft palate and the retromolar trigeminal region, with only 2 percent of cases in which mucoceles were present in the lingual glands (Sugerman et al., 2000; Bordini et al., 2001). Studies show that most mucoceles are formed from trauma, with those located on the lower lip being one of the cases of mucoceles in which patients seek treatment the most, as they often interfere with speech, chewing and are aesthetically disturbing (Redish, 1956).

Within the treatment possibilities for mucocele, there are some options such as removal of the salivary gland involved in cases where there was no spontaneous remission of the lesion, which are the most severe cases. The other option is through surgical removal by enucleation or marsupialization in less severe cases. In marsupialization, the upper part that is in contact with the mucosa is removed, suturing the free edge with the oral mucosa, leaving an open part that can be filled with decontaminated gauze. In enucleation, the cystic lesion is completely removed without rupture (Peterson et al., 1998; Chowdhury & Maji, 2018; Vander Poorten & Delaere, 2017). The technique of micromarsupialization, is a form of treatment in which the passage of a suture through the lesion occurs, which will trigger the release of the mucous content and which after the removal of the suture, will originate in fistulas, being a less invasive technique compared to other forms of conventional treatments and that will bring greater comfort to the patient (Ghazarian & Alavi, 2018; Tao et al., 2020; Amaral et al., 2004). The objective of this case report article is to report a mucocele treatment in which a micromarsupialization technique was used.

METHODOLOGY

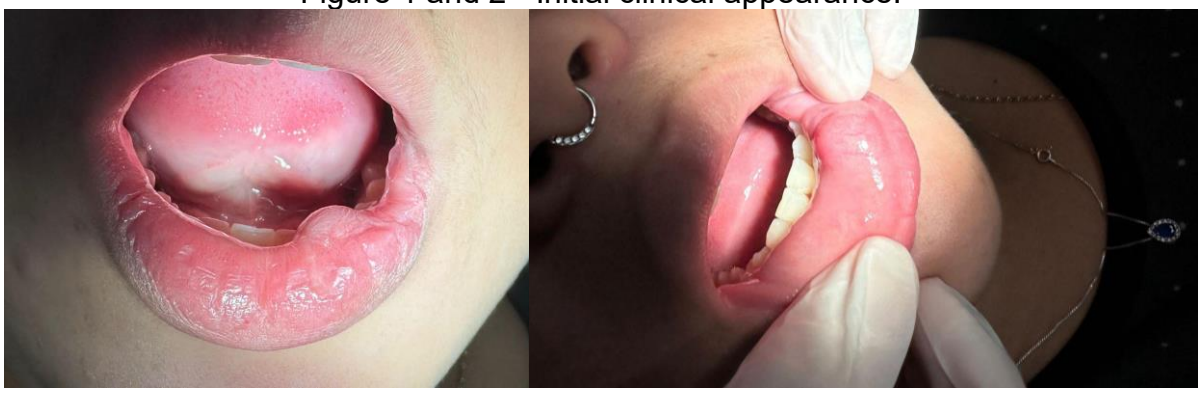
This work is a case report article, from which it becomes evident the need to use another existing and published work as a basis to construct this report, since it is extremely necessary to use a correct methodology and structure and respective to this type of article. Thus, the study by Yin (2001) was used to serve as a guide for how this report should be

constituted, which approach to use, structuring and division of topics, how searches for other articles should be done in order to enrich the article with scientific foundations, what must be included in this study and what should not be included. Although this is a case report, it is extremely necessary to conduct online searches to obtain theses for undergraduate, master's and doctoral degrees that address issues related to the topic, enriching the article and providing greater scientific and clinical evidence on the event in question. Therefore, searches were conducted in the following databases: Scielo, PUBMED Central, Web of Science, BVS/BIREME, PROSPERO in conjunction with Google Academy. In addition, the following descriptors were used so that during the search only articles, books and research on the topic addressed in the report are collected: Mucocele; Micromarsupialization; Dental care.

CASE REPORT

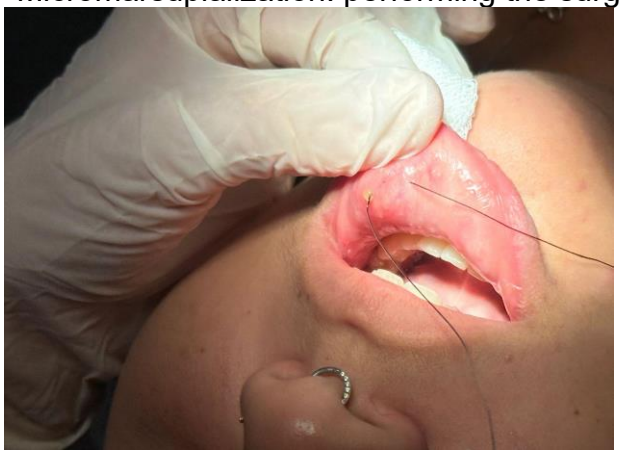
A female patient arrived at the office questioning the appearance of a lump in the region of her lower lip. She sought out the dentist due to a history of mouth cancer in her family.

Figure 1 and 2 - Initial clinical appearance.



During the clinical examination of the patient's entire oral cavity, a lesion was seen on the lower lip. After a clinical examination, combined with discussions with other dentists about what this abnormality was, together with tactile tests in the region of the lesion, it became evident that it was a mucocele (Figure 1 and 2). After a conversation with the patient about the possible forms of treatment, she preferred the micromarsupialization technique because it is less invasive than the others and because it is something quicker and simpler.

Figure 3 - Micromarsupialization: performing the surgical knot.



To perform the procedure, infiltration anesthesia was used, using the anesthetic Lidostesim AD and the suture thread was 3.0 silk. During the procedure, when the suture thread was passed through the lesion, creating two holes, part of the mucus that had accumulated inside the lesion was released and cleaned with medicated gauze (Figure 3).

Figure 4 - Immediate post-operative period.



Immediately after the suture was performed, a significant regression of the lesion could be seen (Figure 4). At the end of the procedure, the patient was spoken to in order to explain the necessary measures in the post-operative period, which were: chemical and mechanical hygiene of the oral cavity in conjunction with chlorhexidine, which should be applied after these first two procedures, highlighting the need to use a clean medicated gauze, contributing to the patient's health and recovery.

DISCUSSION

In this report, infiltrative anesthesia was used due to the patient's fear of pain and to provide her with more comfort. However, in other cases, depending on the patient, the use of only topical anesthetic may be an option, especially in patients who fear needles, such as children or other individuals who do not like anesthesia to a level that would hinder the course of the procedure. A positive point of the micromarsupialization technique compared to the surgical treatment procedure is the fact that if it is through surgery, it will be necessary to use infiltrative anesthesia and prescribe antibiotics for the patient's postoperative period. In micromarsupialization, however, it can be done with topical anesthetic and in the postoperative period, the patient will use chlorhexidine and standard mechanical and chemical hygiene. However, during the micromarsupialization procedure, it is extremely important that the dental surgeon remains alert to the suture thread, which can be a distributor of bacteria into the lesion, highlighting the importance of taking care not to let the thread pass through other regions of the face, avoiding as much as possible that it comes into contact with contaminated surfaces so that contamination does not occur in the lesion.

Micromarsupialization allows the patient to have their problem resolved in a way that does not require surgery, which gives the patient peace of mind and security, which is essential for the procedure to proceed. When the patient is relaxed, they will not be nervous, anxious or distressed before and during the procedure, which could hinder its effectiveness, and could even harm the patient if they did something that prevented the surgeon from performing the suture correctly. Another factor is that the surgery would require the patient to receive infiltrative anesthesia. However, certain people with systemic conditions, diseases and other problems and conditions cannot receive this type of anesthetic. In micromarsupialization, however, topical anesthetic can be used, resolving the problem and maintaining the body's homeostasis. Furthermore, with surgical treatment, it would be necessary to use antibiotics, following a pattern of use for it to be effective, however, there is a risk of the person ignoring the use, using it only a few times without following the pattern established by the professional, increasing the chance of the patient ending up acquiring some process that impacts their overall health and their post-operative period.

A negative point of micromarsupialization is if the fistulas become blocked after a certain time, which will mean that the patient will have no choice but to undergo surgery to remove the gland, which highlights the need to combine a good procedure performed by the dentist together with the follow-up of post-operative care and hygiene measures for the

patient, being a work between the patient and the professional so that the procedure is successful.

CONCLUSION

The technique known as "micromarsupialization" is an extremely effective way to treat mucoceles. It is a quick and easy treatment that patients can tolerate without problems. It can be performed with topical anesthesia in certain cases or with infiltrative anesthesia. In addition, it is important to take extra care with hygiene after this procedure, with mechanical and chemical control, combined with chlorhexidine, which should be applied only to the region in order to avoid future complications. Therefore, micromarsupialization is an excellent technique for treating mucoceles, but the patient's cooperation is necessary during and after treatment in order to obtain the best results.

REFERENCES

1. Yin, R. K. (2001). *Estudo de caso: planejamento e métodos* (2a ed.). Porto Alegre: Bookman. (M. Ballejo Canto, Trad.).

2. Santos, P. G. S. T. dos, Travassos, R. M. C., Ribeiro, A. da C., Braga da Paz Júnior, F., Lyra da Paz, E. S., Guaraná, C. F. R., Almeida de Menezes, M. R., & Veloso, H. H. P. (2024). Pathologies and their consequences on the balance of oral health. *Ciências da Saúde, 28*(138). https://doi.org/10.69849/revistaft/cs10202409071332

3. Aldred, M. J., & McCulloch, C. (2016). Salivary glands: structure, function and clinical significance. *British Dental Journal, 220*(9), 521-526.

4. Sugerman, P. B., Savage, N. W., & Young, W. G. (2000). Mucocele of the anterior lingual salivary glands (glands of Blandin and Nuhn): Report of 5 cases. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontology, 90*(4), 478-482.

5. Bordini, P. J., Grosso, S. F. B., & Carmo, C. (2001). Estomatologia na clínica infantil: principais alterações bucais. *Revista da Associação Paulista de Cirurgiões Dentistas, 55*(5), 366-370.

6. Redish, C. H. (1956). Ranula: A report of two cases. *Journal Indiana Dental Association, 35*, 9-12.

7. Peterson, L. J., Ellis, E., Hupp, J. R., & Tucker, M. R. (1998). Tratamento cirúrgico das lesões patológicas orais. In *Cirurgia Oral e Maxilofacial Contemporânea* (3ª ed., pp. 524-533). Rio de Janeiro: Editora Guanabara Koogan S.A.

8. Tao, Y., Zhang, H., & Liu, H. (2020). Micromarsupialization as a treatment for mucoceles: A systematic review. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, 129*(4), 438-445. https://doi.org/10.1016/j.oooo.2020.01.016

9. Ghazarian, A., & Alavi, A. (2018). Micromarsupialization: A minimally invasive technique for management of oral mucoceles. *Journal of Oral and Maxillofacial Surgery, 76*(8), 1727-1732. https://doi.org/10.1016/j.joms.2018.01.010

10. Chowdhury, S. R., & Maji, A. (2018). Management of mucoceles: A review of the literature. *Journal of Oral and Maxillofacial Surgery, 76*(7), 1470-1475. https://doi.org/10.1016/j.joms.2018.01.009

11. Vander Poorten, V., & Delaere, P. (2017). Treatment options for oral mucoceles: A review. *European Archives of Oto-Rhino-Laryngology, 274*(2), 683-689. https://doi.org/10.1007/s00405-016-4295-1

12. Amaral, T. H. A., Silva, F. W. G. P., & Arnez, M. F. M. (2004). Mucocele: tratamento alternativo pela técnica de micro-marsupialização. In *VII Congresso Universitário Odontológico: 26ª Jornada Odontológica de Ribeirão Preto* (p. 84-84).

13. Harrison, J. D. (1975). Salivary mucoceles. *Oral Surgery, Oral Medicine, Oral Pathology, 39*(2), 268-278.