HYPERPLASTIC LESION EXCISION FOR PROSTHETIC PURPOSES IN THE SUPERIOR VESTIBULAR RECESS REGION CAUSED BY PERIPHERAL MALADAPTATION: A CASE REPORT

EXÉRESE DE LESÃO HIPERPLÁSICA PARA FINS PROTÉTICOS EM REGIÃO DE FUNDO DE VESTÍBULO SUPERIOR CAUSADA POR DESADAPTAÇÃO PERIFÉRICA: RELATO DE CASO

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ABSTRACT

The objective of this study is to present a surgical approach to reactive lesions for rehabilitation purposes in an elderly patient. A 63-year-old male patient presented to the dental clinic of a higher education institution reporting swelling in the inner/upper part of his mouth, as well as aesthetic dissatisfaction when smiling. During the medical history, he reported that he had used the prosthesis for approximately 5 months but stopped using it continuously due to severe pain in the areas corresponding to the "edges" of the prosthesis, but he did use it while chewing. On intraoral examination, lesions with a hyperplastic appearance could be highlighted in the fundus of the vestibule of the upper arch bilaterally. Based on the clinical characteristics presented, it was decided with the patient to remove the lesions surgically, followed by referral for prosthetic rehabilitation. The fragments were removed and sent for confirmation of the condition, confirming the hypothesis of reactive fibroepithelial hyperplasia. The patient was then referred for prosthetic rehabilitation. Surgical approach for conditioning of gingival tissue prior to rehabilitation treatment is, therefore, a viable option with a good prognosis when it comes to a reactive lesion, making the environment suitable for the installation of removable prostheses.

KEYWORDS: dental prosthesis; hyperplasia; surgery, oral; mouth rehabilitation.

RESUMO

O objetivo deste estudo é apresentar uma abordagem cirúrgica de lesões reativas com finalidade protética em paciente idoso. Paciente 63 anos, gênero masculino, compareceu à clínica odontológica de uma Instituição de Ensino Superior relatando inchaço na parte interna/superior da boca, além de insatisfação estética ao sorrir. Durante a anamnese, relatou ter usado a prótese por aproximadamente 5 meses, mas interrompeu o uso contínuo devido à forte dor nas áreas correspondentes às "bordas" da prótese, porém a utilizava para mastigação. No exame intraoral, pode ser evidenciadas lesões hiperplásicas no fundo de vestíbulo do arco superior bilateralmente. Com base nas características clínicas apresentadas, decidiu-se com o paciente pela remoção cirúrgica das lesões, seguido de encaminhamento para reabilitação protética. Os fragmentos foram removidos e enviados para confirmação do quadro, confirmando a hipótese de hiperplasia fibroepitelial reacional. O paciente foi então encaminhado para reabilitação protética. A abordagem cirúrgica para condicionamento do tecido gengival antes do tratamento reabilitador, portanto, configura-se como opção viável e com bom prognóstico quando se trata de lesão reativa, tornando o meio adequado para a instalação de próteses removíveis.

PALAVRAS-CHAVE: prótese dentária; hiperplasia; cirurgia bucal; reabilitação bucal.

1. INTRODUCTION

In the daily clinical setting, the dental professional is faced with common conditions that sometimes require interventions, such as the appearance of lesions in the oral cavity[1,2]. Pathologies in this region can be caused by abnormal tissue development, viral/ bacterial/ infectious processes, or through stimuli, which are relatively associated with inflammatory conditions[2]. Reactive lesions are benign, non-infectious pathologies that are caused by constant tissue

injuries[2,3].

Hyperplasias are reactive lesions present in the oral mucosa, produced by recurrent traumas[3]. This type of pathology has subclassifications, among which the following stand out: adenomatoid; focal; and inflammatory fibrous, differentiated by the correlation of clinical characteristics allied to the histopathological[1,4]. Inflammatory fibrous hyperplasia, also known as reactive fibroepithelial (RF), clinically presents itself through tissue with a color similar to the mucosa in shades varying between pale pink or reddish, as well as having variations in size[4,5]. It is generally related to the elderly population due to the use of sometimes ill-fitting dental prostheses[5].

The main causes of RF in the oral environment are prosthetic maladaptation and local bite trauma5,6. This condition occurs when the prosthetic appliance loses its vacuum in the edentulous area and becomes unbalanced towards gingival areas. In the face of this constant chronic irritant, an inflammatory response is formed, resulting in local volume increase in the target area, forming the pathology.[6] However, it is a lesion that does not completely remit, requiring interventions to restore the health profile of the hyperplastic tissue[7].

Surgical excision is the primary treatment method to recondition the tissue[8]. Removal can be performed by: conventional scalpel; electric; cryotherapy; or incision with low-intensity laser[9]. However, it is important to remove the causal factor to generate a favorable prognosis for the case, without possible recurrences[10].

In this context, the objective of this study is, through a case report, to present a surgical approach to reactive lesion for rehabilitation purposes in an elderly patient.

2. CASE REPORT

A 63-year-old male patient, with dark skin and normal systemic health, attended the dental clinic of Nilton Lins University, reporting as his main complaint swelling in the inner/upper part of his mouth, in addition to aesthetic dissatisfaction when smiling. After signing the informed consent form, he began the appointment. During the medical history, he reported that he had used the prosthesis for approximately 5 months but suspended its continuous use due to severe pain in the areas corresponding to the "edges" of the prosthesis, but he used it during chewing. This same prosthesis had fractured approximately 2 days ago and was discarded by the patient. In the intraoral examination, it is possible to highlight lesions with a hyperplastic appearance in the fundus of the vestibule of the upper arch bilaterally (Figure 1). Based on the clinical characteristics presented, it was decided together with the patient to remove the lesions surgically, followed by referral for prosthetic rehabilitation.

Initially, intra and extraoral antiseptics were performed using 0.12% chlorhexidine gluconate mouthwash for 60 seconds and 2% chlorhexidine gluconate topical, followed by the assembly of the operating field. Subsequently, infiltrative anesthesia was performed in the peripheral zone of the lesion, with a 1cm margin at the base, using 2% lidocaine associated with epinephrine at a concentration of 1:100,000 (Figure 2).

Figure 1. Initial intraoral appearance.

After the analgesic effect, the base of the lesion was pinched with the aid of an Adson forceps, marking the area to be sectioned. At the end of the pinching, the tissue was pulled, with subsequent cutting with a #15 blade, until the complete removal of the tissue (Figure 3).

Figure 2. Peripheral anesthesia of the lesion.

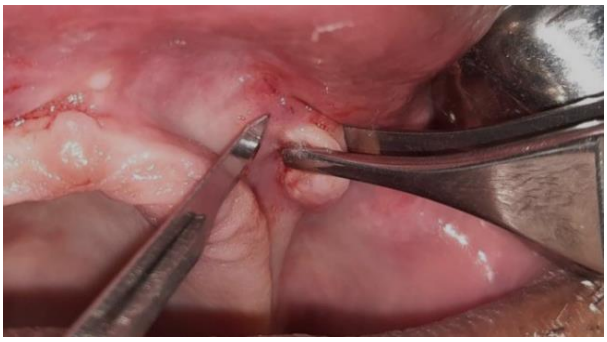

Figure 3. Pinching and excision.

After the cuts were completed, the bleeding was controlled by performing hemostasis with gauze soaked in 0.9% saline solution on the tissue. Next, the tissue was spread with Goldman Fox scissors, where no smaller cellular glands were observed (Figure 4). Checking the consistent profile of the tissue and the absence of associated pathologies, the edge was cooped with the aid of suture through simple stitches, using 4-0 nylon thread. Subsequently, the removed pieces were immersed in 10% formalin solution in collection pots and sent to the Department of Pathology and Legal

Medicine of the Faculty of Medicine of the Federal University of Amazonas, with a diagnostic hypothesis of RF (Figure 5).

Figure 4. Clinical appearance after removal.

Figure 5. Fragments of hyperplastic tissue.

The following medications were prescribed for post-operative care: An anti-inflammatory (nimesulide 100mg), 1 tablet every 12 hours for 3 days. An analgesic (sodium dipyrone 500mg), 1 tablet every 6 hours for 2 days. The patient was instructed on their diet, physical activity, and hygiene of the area. After 7 days, they returned for suture removal. After the 30-day follow-up period, it was evident that there were no complications, and the tissue was in the process of healing (Figure 6). Subsequently, the patient was referred for continued treatment with removable prostheses.

Figure 6. Intraoral clinical appearance after 30 days of follow-up.

In histological sections stained with hematoxylin and eosin (HE), a parakeratinized stratified epithelium with areas of acanthosis was observed. In addition, tissue fragments were observed with a lesion characterized by angiogenesis, fibroblast proliferation, chronic inflammatory infiltrate with predominance of lymphocytes, plasma cells, and histiocytes. (Figures 7 and 8). These findings, together with the clinical description of the case, confirm the diagnostic hypothesis. The patient is being followed up with removable prostheses installed, restoring the lost aesthetics and function. After 1 year of treatment, the patient remains without complaints of discomfort and/or lack of adaptation of the prosthesis. (Figure 9).

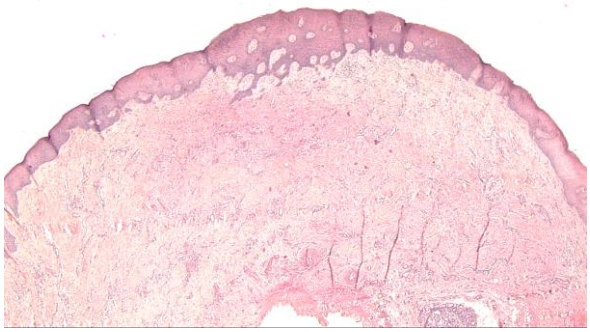

Figure 7. Tissue with areas of acanthosis of the lining epithelium and, in the connective tissue portion, shows angiogenesis, fibroblastic proliferation with collagen fiber deposits and areas of chronic inflammatory infiltrate (H&E 40x).

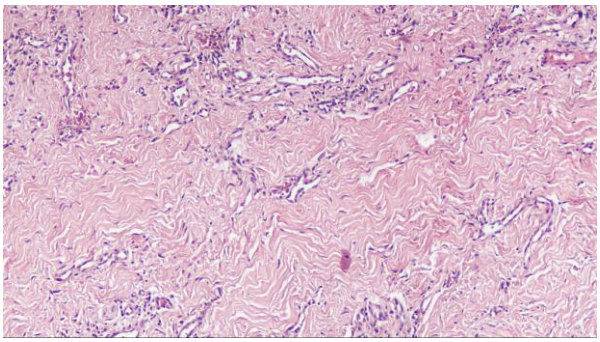

Figure 8. Presence of numerous blood vessels and abundant collagen fiber deposition (H&E 100x).

Figure 9. Final clinical appearance after follow-up and prosthetic rehabilitation

3. DISCUSSION

The indication of removable prostheses in the elderly population for aesthetic/functional reasons is a considerable need in the population, since tooth loss still persists as a public health problem[11]. After the installation of the prostheses, the professional must pay attention to the adaptation of the pieces regardless of the region, whether implant, dento or mucosupported, as this defect can cause consequences to the tissue[11,12]. The main consequence to the soft tissues in mucosupported prostheses is associated with overextension of the pieces, a defect responsible for acting as an irritant to the tissue, acting in the formation of an inflammatory process in the affected region[3,9].

The mucosa has adaptation limits directed to the basal area. Once this area is exceeded, clinically relevant conditions such as hyperplasias can arise as a response, accompanied by complaints from the patient, and may or may not present ulcerations[9,13]. This growth occurs as a defense mechanism of the body, modifying itself to avoid repetitive aggressions to the region[5]. RF is considered a common reactive lesion, with high incidence rates in the oral cavity, presenting variable consistency between firm and flabby, with characteristics depending on the traumatic condition presented[2,14]. In the clinical case presented, even with the lesion formed, the patient's complaint persisted, since the ulceration characteristic is evident in the intraoral clinical view.

Despite being a high-recurrence pathology compared to lesions found in the oral cavity, RF has a simple resolution promoted by the removal of the causal factor and consequently the hyperplastic tissue, either in a more conservative or invasive way[3,8,13,14]. For Silva Júnior *et al*. (2023)[13], there is the possibility of conditioning the hyperplastic tissue from the prosthetic rebasing with soft-type materials even in the presence of ulcerations, but with limits varying in the extension of the lesion. However, this condition cannot be performed in the present case, as the old prosthesis was discarded by the patient after it was fractured.

When tissue is unable to return to its normal state, surgical removal of the lesion is indicated, according to Santos *et al. (*2021)[3]. The same author also reinforces that the act is a viable option with a favorable prognosis for future prosthetic rehabilitation. In addition, the professional should pay attention to the characteristics presented in the clinical case, since reactive lesions, despite being common, require investigation to avoid possible erroneous diagnoses by the professional, that is, indicating the association of clinical condition and histopathological report[15].

However, it is important to note that RF is caused by recurrent trauma and that the professional must be aware of this after the installation of new prostheses. If the cause is not treated, it may recur and require intervention[5]. Simple periodic monitoring and follow-up with the dentist can help prevent the development of common pathologies such as hyperplastic lesions[11,12]. In the case reported, the patient continues to respect periodic follow-up, where no signs of lesion recurrence are observed.

4. CONCLUSION

Surgical conditioning of gingival tissue prior to rehabilitation treatment is, therefore, a viable option with a good prognosis when it comes to a reactive lesion, making the environment suitable for the installation of removable prostheses.

5. REFERENCES

[1] Santana ST, Martins-Filho PR, Piva MR, de Souza Andrade ES. Focal fibrous hyperplasia: A review of 193 cases. J Oral Maxillofac Pathol. 2014; 18(1):86-9.

[2] Souto MLS, Piva MR, Martins-Filho PRS, Takeshita WM. Maxilofacial lesions: a survey of 762 cases from the federal University of Sergipe, Brazil. Rev Odontol UNESP. 2014; 43(3):185-90.

[3] Santos TVMS, Silva FB, Aguiar FM, Silva Junior JP, Oliveira AT. Conventional prosthetic rehabilitation after surgical removal of fibrous hyperplasia: case report. Rev Odontol Arac. 2021; 42(1):24-32.

[4] Souza S, Alves T, Santos J, Oliveira M. Oral lesions in elderly patients in referral centers for oral lesions of Bahia. Int Arch Otorhinolaryngol. 2015; 19(4):279-85.

[5] Vasqués GP, Salas JE, Moreno ES, Ayuso MR, Marí RA, López LJ. Inflammatory papillary hyperplasia: a systematic review. Med Oral Patol Oral Cir Bucal. 2017; 22(1):36-42.

[6] Dutra KL, Longo L, Grando LJ, Rivero ERC. Incidence of reactive hyperplastic lesions in the oral cavity: a 10 year retrospective study in Santa Catarina, Brazil. Braz J Otorhinolaryngol. 2019; 85(4):399-407.

[7] Sangle VA, Pooja VK, Holani A, Shah N, Chaudhary M, Khanapure S. Reactive hyperplastic lesions of the oral cavity: A retrospective survey study and literature review. Indian J Dent Res. 2018 Jan-Feb.;29(1):61-6.

[8] Martorelli SBF, Martorelli FO, Ribeiro GD, Leite DSG, Ferraz RTM, Gheno CFS, et al. Inflammatory fibrous hyperplasia due to maladapted prosthesis: Therapeutic considerations and case report. Res Soc Dev. 2021; 10(9):2525-3409.

[9] Iordanishvili AK, Soldatova LN, Pihur OL, Mihajlova ES, Peremyshlenko AS, Soldatov VS. Oral mucosa reaction in patients adapting to removable dentures. Stomatologiia (Mosk). 2016; 95(6):44-7

[10] Mozzati M, Mortellaro C, Gallesio G, Ruggiero T, Pol R. Surgical treatment of denture-induced fibrous hyperplasia with plasma rich in growth factors. J Craniofac Surg. 2015; 26(3):772-5.

[11] Ali Z, Baker SR, Shahrbaf S, Martin N, Vettore MV. Oral health-related quality of life after prosthodontic treatment for patients with partial edentulism: A systematic review and meta-analysis. J Prosthet Dent. 2019 Jan.;121(1):59-68.e3.

[12] Duong HY, Roccuzzo A, Stähli A, Salvi GE, Lang NP, Sculean A. Oral health-related quality of life of patients rehabilitated with fixed and removable implant-supported dental prostheses. Periodontol 2000. 2022 Feb.; 88(1):201-37.

[13] Silva Júnior JP, Veloso IB, Galvão LF, Almeida PPL, Pereira TS, Gonçalves CC, et al. Temporary relining in removable prosthesis for corrective and conditioning purposes: a case report. Adv Res. 2023; 24(6):78–83.

[14] Gheno JN, Martins MA, Munerato MC, Hugo FN, Sant'ana Filho M, Weissheimer C, et al. Oral mucosal lesions and their association with sociodemographic, behavioral, and health status factors. Braz Oral Res. 2015; 29:S1806-83242015000100289.

[15] Libik TV, Gileva OS, Kuklina EA, Kuklin NS, Rogozhnikov AG. Mucoperiodontal lesions: improvement of prosthodontic treatment considering initial indicators of patients' oral health. Stomatologiia (Mosk). 2021; 100(6. Vyp. 2):22-8