SURGICAL TECHNIQUES TO CASES OF CLASS I RECESSIONS CAUSED BY LOWER LABIAL FRENULUM

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ABSTRACT

The gingival recessions are currently one of the major gum problems that affect different population groups, without distinction of gender or socioeconomic status. Recessions are defined as changes in the gingival margin, resulting from the apical migration of the gums causing the exposure of tooth roots. The aim of this study is to compare two surgical techniques for correction of these defects gum. Materials and Methods: Patients were divided into two groups, the group (A) was subjected to classical technique of free gingival graft and then coronal repositioning. The second group (Group B) was subjected to the Modified Apically Respositioned Flap (MARF technique) associated with polypropylene barrier and after 60 days was performed root coverage with tissue by tunneling technique. The free gingival graft (FGG) technique in quantitative ratio also proved more effective than the alternative proposed technique, but for the comfort of the patients, the MARF technique with non-resorbable membrane was preferred by them, mainly by avoiding second surgical moment to obtain the grafted material. Considering the second surgical stage for the root coverage, it shows that both technique of coronal r epositioning as the tunneling connective tissue, were effective in the treatment of Miller Class I recessions.

KEYWORDS: Barodotalgia, atmospheric pressure, flight, diving

1. INTRODUCTION

The growing concern of modern society to achieve the ideal smile arouses in patients the perception of problems related to the gingival tissues. Thus, the presence of alterations in the position of the gingival margin causing root exposure has been considered a serious aesthetic problem[1].

There are currently several periodontal surgical techniques for the recovery of dental roots. Free Gingival Grafts (FGG) have been frequently indicated for the treatment of gingival defects responsible for the exposure of dental root surfaces. Introduced by Bjorn in 1963, the FGG technique, still today, represents the main surgical technique for increasing keratinized tissue width, increasing vestibule extension and eliminating the insertion of brakes, proving to be a predictable procedure for the treatment of mucogingival deformities. The surgical technique of FGG consists briefly in the deinsertion of a gingival fragment containing epithelial and connective tissues from a donor site and transfer to the recipient bed. This technique is used when there is insufficient amount of keratinized gingival tissue adjacent to mucogingival defects, and/ or when it is desired to convert a periodontal biotype considered to be thinner in a thicker biotype. However, this FGG technique is widely rejected as an option for treatment by patients, since the difference in graft staining after healing at the receptor site compromises aesthetic results. Also, the discomfort present in the donor area, which is, most of the time, exposing a large area of connective tissue responsible for postoperative pain noted[2].

Faced with the limitation of the FGG technique, new techniques of tissue manipulation have been developed. The Modified Apical Repositioning Retail technique[3], otherwise known as MARF is a technique that has as main advantage the increase of the keratinized gingival band specifically in the area of the mucogingival defect, and thus eliminates the need to remove tissue from a second donor bed.

Recently Mourinho *et al.* (2015)[4] have suggested the use of a non-resorbable polypropylene membrane in order to improve the quantitative result of keratinized gingiva formation obtained by the original MARF technique.

Considering the importance of the minimal presence of gingiva inserted around teeth to maintain periodontal health, the development of alternative techniques that promote the increase of keratinized gingiva is justified. Thus, this paper aims to present, through a case report, options for Surgical techniques for cases of recessions class I caused by lower lip brake, comparing the results obtained between the classic technique of free gingival graft and that of MARF associated with a polypropylene

barrier for Increase the inserted gingival range and later the root covering with tunneled connective tissue.

2. MATERIAL AND METHODS

The group of participants involved in this study consisted of 4 patients, aged between 20 and 30 years, two men and two women being selected at the Dental Clinic of "Universidade Paranaense" - UNIPAR - Umuarama - Paraná. These patients were informed by the researcher about the purpose of the research and soon after, those who voluntarily agreed, received and signed the informed consent form, which was previously submitted and approved by the Research Ethics Committee, According to guidelines for the protection of the research subject established by Resolution No. 196/96 of the National Health Council of the Ministry of Health.

We excluded from this study individuals with systemic diseases such as diabetes, cardiovascular disorders; Diseases of the immune system; Coagulation diseases; Psychiatric and neurological diseases; Patients treated with radiation recently (two-year period); Patients treated with chemotherapy recently (two-year period); smoking; pregnant women; infants; Patients with a history of alcohol and drug abuse; Patients with poor plaque control and/ or inflammatory diseases located in the soft tissues adjacent to areas with surgical indication.

3. RESULTS

Patients participating in this study should present recessions of the lower anterior region classified as Miller class I, with a maximum exposure of 4 mm of dental root and influence of the lower lip brake (Figure 1).

Figure 1. Initial case registry, performed with the free gingival graft technique.

Patients received the same type of surgical procedure on the same day, and one group (Group A) underwent a free gingival graft technique (Figure 2) and after 60 days the root coverage was performed by the coronally repositioned flap technique (Figure 3 and 4). Another group (Group B) was submitted to a Modified Apical Repositioning (MARF) flap technique associated to the polypropylene barrier (Figure 5 and 6) and after 60 days the root canal with connective tissue was performed using the tunneling technique (Figure 7 and 8).

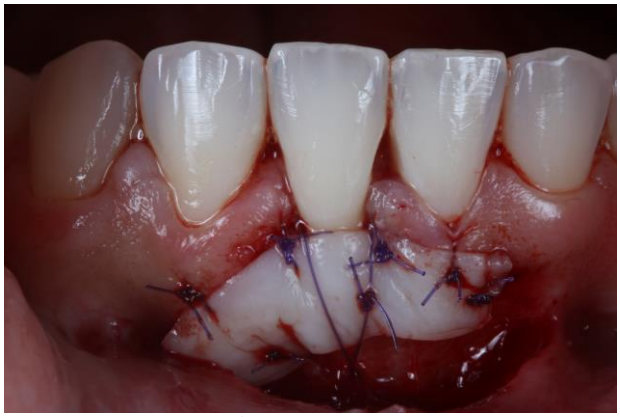

Figure 2. Free gingival graft stabilized with suture.

Figure 3. Gingival graft free after 60 days.

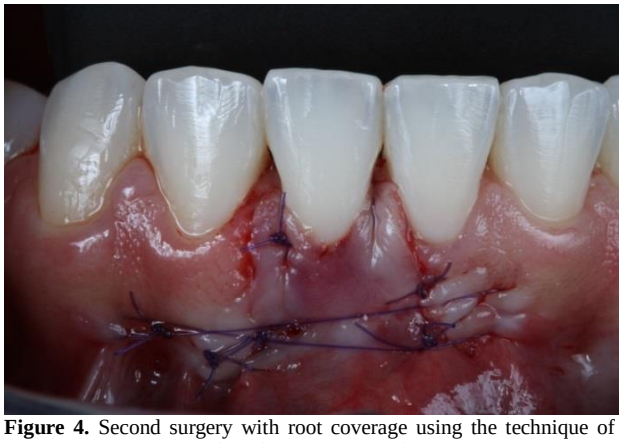

Figure 4. Second surgery with root coverage using the technique of coronary repositioning of the free gingival graft.

4. DISCUSSION

The presence of gingival recessions has been reported as an aesthetic periodontal problem perceived by the patients, which may be associated with the discomfort

caused by dentin hypersensitivity or even root caries[5].

Figure 5. Recording initial of 3 mm recession, treated by MARF technique with polypropylene barrier.

Figure 6. MARF technique with non-resorbable polypropylene barrier.

Figure 7. Gingival appearance after 60 days of the MARF technique with the non-resorbable membrane.

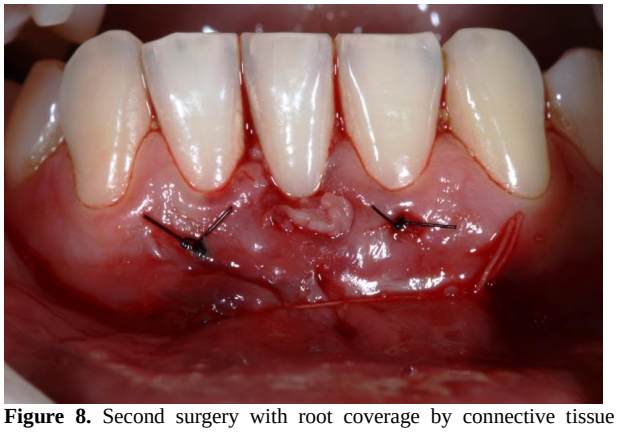

Figure 8. Second surgery with root coverage by connective tissue tunneling technique.

Figure 9. Post-operative 3 months of coronary repositioning of the free gingival graft.

Figure 10. Post-operative 3 months of connective tissue tunneling technique.

The literature reports a great diversity of factors related to the etiology of gingival recessions. Thus, these alterations of the gingival margin that as a consequence exposes the dental roots can be observed both in patients with periodontal health clinics and patients with periodontal diseases. Individuals with periodontal health usually present with brushing trauma in areas of fine biotypes and predisposing conditions related to the presence of shallow vestibule, anomalous insertions of lip braces or flanges, untreated cervical caries lesions, fixed or removable, orthodontic movement outside the bone limits, or even inadequate dental positioning[6]. The patients participating in our study had periodontal health, but the presence of shallow gingival recessions with root exposures of up to 4 millimeters and with the origin influenced by the presence of anomalous insertion of the lower lip brake.

The identification and treatment of etiological factors are important steps for successful treatment of gingival recessions. In many cases, the absence or the small range of gingiva inserted leads to the need for additional preparatory surgeries to be performed after the root recoil. Much is discussed about the importance of the minimal

amount of keratinized gingival tissue responsible for maintaining the integrity of the periodontium[7] and peri-implant tissues[8,9,10]. Thus, mucogingival surgeries have been widely used to adjust or improve soft tissue conditions around teeth and implants[11,12].

Among the surgical techniques for the recoating of gingival recessions the main and best known are the semilunar flap positioned coronally[13], the pedicled grafts[14], Coronal Repositioning Retail[15], associated or not with subepithelial connective tissue grafts[16,17] and the tunneling or envelope technique described by Raetzke (1985)[18]. This technique is indicated for root coverage in areas isolated from marginal tissue recession and was used in our study. The technique consists of the partial-thickness tunnel flap extending 3 to 5 mm laterally and apically to the recession area, including the interdental papillae without rupturing them, then the connective tissue graft is stabilized with sutures.

Classically the technique of free gingival graft is described in the literature since the 60's as the most effective therapeutic method to increase the gingival range inserted and consequently preventive way of progression of gingival recessions[19]. When we have a range of apical keratinized recession, the coronal repositioned flap has been suggested as a good treatment option, this was possible to be confirmed in our study since the patients who received the treatment with free gingival graft and posterior coronal repositioning of retail had 100% coverage of Miller's Class I recessions. As a disadvantage of this type of surgical approach it is possible to observe a discrete color difference between the graft and the adjacent area, which can be interpreted as limiting the technique in regions of high expectation for aesthetic result.

Alternative surgical techniques to the FGG technique have been extensively studied, such as the apically displaced flap and the apically modified repositioned flap used alone or in combination with autogenous and/ or allogeneic grafts, have shown good results for tissue augmentation keratinized[3,4]. In our research the same methodology was used in the technique described by Mourinho *et al.* (2015)[4]. It is noted that the use of the polypropylene barrier promotes a better amount of keratinized tissue, being effective in increasing the range of gingiva inserted in areas of gingival recessions. The association of the connective tissue graft performed by the tunneling technique allowed the complete recovers of the Miller Class I recess located in the lower anterior region, with the advantage of presenting a more acceptable final aesthetic result when compared with the technique of coronary repositioning of the gingival graft free.

5. CONCLUSION

Despite the small number of participants in this study, it can be observed that both operative techniques were effective and fulfilled the purpose of improving the gingival tissue condition. The free gingival graft technique in quantitative proportion was still more effective than the proposed alternative technique, but with respect to comfort for the patient, the MARF technique with the non-resorbable membrane was preferred by the patients, mainly to avoid a second bed to obtain the grafted material. Considering the second surgical stage for root coverage, it can be observed that both the coronary repositioning technique and the tunneling of the connective tissue were effective for the treatment of Miller's class I recessions.

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