

SUBEPITHELIAL GINGIVAL GRAFT: A MODIFIED TECHNIQUE FROM FREE GINGIVAL GRAFT – CASE SERIES

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ABSTRACT

Objectives: The aim of the present manuscript was to propose a modification in the free gingival graft technique with improved clinical esthetic results.

Methods and Materials: Clinical cases subjected to free gingival graft periodontal plastic surgeries are presented to justify the modifying technique.

Results: Clinical observations showed improved appearance in the repair with the modified free gingival graft, when compared with the traditional free gingival graft technique.

Conclusion: The results of the present study showed that the proposed modified technique denominated subepithelial gingival graft may be considered a superior option compared to the free gingival graft.

UNITERMS: Graft, mucogingival surgery, periodontal surgery. R Periodontia 2011; 21:45-48

INTRODUCTION

The first report concerning the free gingival graft was published in 1902, by Younger, followed by others in 1906 (Harlan) and 1911 (Rosenthal), as described by Baer & Benjamin¹ in 1981. However, it was only in 1963 that Bjorn² described the technique as a way of creating or increasing the width of attached gingiva. Currently, the trend is to substitute the term “free gingiva” for “keratinized soft tissue”³. It is not a common practice to prioritize the use of the graft for gingival recession, nor does it provide good esthetic results; thus its indication is not appropriate for upper frontal areas, where smiling exposes the tooth-gingival limit. The proposed modified technique used in the present study seems to have more satisfactory cosmetic results, with its color closest in the adjacent areas, and a smaller reduction of the graft⁴.

METHODS AND MATERIALS

Case selection: Clinical situations in which there were indications for the use of free gingival graft procedure in order to increase the width of keratinized mucosa.

Technique: The procedure included fixation of the gingival graft or keratinized soft tissue in a previously prepared recipient site (Figs. 1A and 1B) that was preferably stabilized with bioabsorbable suture (Fig. 1C).

The partial thickness flap was then repositioned in a way that the graft was submerged (Fig. 1D). During the initial two weeks postsurgical, total or partial apical recession can occur, exposing the gingival graft. Only after 40 to 60 days it was possible to observe whether a second intervention was required, usually involving minimal trauma. The goal was to expose the entire gingival graft that was totally or partially submerged. This was achieved at the expense of the elimination of stitch or burr scarring (Fig. 1E), naturally resulting in minimal postoperative complications (Fig. 1F).

Case reports

In our dental practice, approximately 100 cases have been documented, after patient consent statement, aside from students and other colleagues who have reported successful results with the modified technique. Here we report the use of the proposed technique in 6 clinical cases.

Case 1: A 34 year-old female patient with Miller class I gingival recession and absence of attached gingiva at

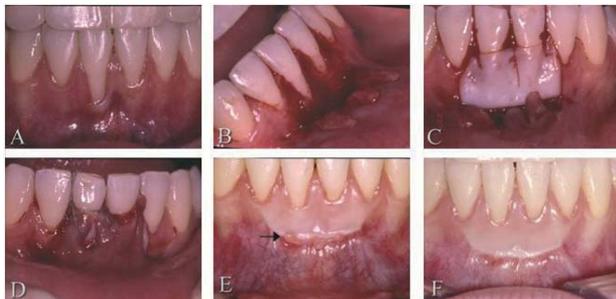


Figure 1 – A) Localized gingival recession. B) Partial thickness flap. C) Gingival graft. D) Flap suture. E) Postoperative follow-up at 90 days (arrow indicates burr scarring). F) Postoperative follow-up at 7 months.

tooth 36 (Fig. 2A) was the first case in which the proposed combined technique was applied⁵, in 2000. The epithelial graft was obtained from the palate and stabilized with non-bioabsorbable suture (Fig. 2B), then the flap was repositioned around the crown (Fig. 2C). At one week postsurgical, partial necrosis and exposure of the graft were observed (Fig. 2D). Scar remnants of the flap (Fig. 2E) were removed and follow-up at five years (Fig. 2F) demonstrated clinical aspects of functional and esthetic normality.

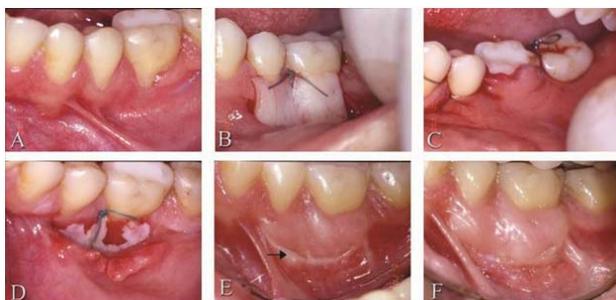


Figure 2 – A) Localized gingival recession. B) Gingival graft. C) Flap suture. D) One week postoperative follow-up E) Postoperative follow-up at 60 days (arrow indicates burr scarring). F) Postoperative follow-up at 6 years.

Case 2: A 37 year-old male patient with Miller class I gingival recession and absence of attached gingiva at teeth 44, 45 and 46 (Fig. 3A). Similar to case 1, the results were both functionally and esthetically satisfactory at two years follow-up (Fig. 3B).



Figure 3 – A) Generalized gingival recession. B) Postoperative follow-up at 2 years.

Case 3: A 46 year-old female patient presenting generalized gingival recession in the maxilla and mandible. On the upper arch, subepithelial connective tissue graft was

performed and on the lower, subepithelial gingival graft. The results at two years postoperative follow-up are shown in Figures 4A to 4F.



Figure 4 – A) Generalized gingival recession. B). Gingival graft. C) Flap suture. D) Identification of stitch scarring. E) Elimination of stitch scarring. F) Postoperative follow-up at 2 years.

Case 4: A 48 year-old male patient presenting generalized gingival recession in the maxilla and mandible. Similar to case 3, subepithelial connective tissue graft was performed on the upper arch and subepithelial gingival graft on the lower. Two graft segments were required for the recession in the teeth 31 to 36, as shown in Figures 5A to 5D.



Figure 5 – A) Generalized gingival recession. B). Gingival graft. C) Flap suture. D) Postoperative follow-up at 5 months.

Case 5: A 50 year-old female patient presenting generalized gingival recession in the maxilla and mandible. Similar to cases 3 and 4, subepithelial connective tissue graft was performed on the upper gingiva and subepithelial gingival graft on the lower and the results at one year postoperative follow-up are shown in Figures 6A to 6D.

Case 6: This clinical case describes a 50 year-old female patient presenting absence of attached gingiva at tooth 36, where the use of subepithelial gingival graft was performed to correct the anatomical condition, as shown in Figures 7A to 7D.



Figure 6 - A) Generalized gingival recession. **B)** Identification of stitch scarring. **C)** Elimination of stitch scarring. **D)** Postoperative follow-up at 2 years.

subepithelial connective tissue graft flap technique, in which the flap covers the epithelial-connective complex obtained from the palate. Given the anatomical difficulties, our group was surprised by the excellent morphological and anatomical results obtained, which valued both esthetics and function. Following the positive clinical results, the group also proposed its adaptation for cases involving the exposure of implant threads or abutments. It is currently possible to correct unfavorable mucogingival anatomical conditions, even where partial exposure of an implant has occurred, corresponding to natural gingival recession⁵. We denominated this modified technique as subepithelial gingival graft, where the gingival graft is recovered by a partial thickness flap, as performed during a subepithelial connective tissue graft. The benefit of this attached gingiva submersion lies in the fact that the graft is fully nourished by vascularization, which diminishes the risks of necrosis, while assisting the spontaneous reproduction of attached and interdental gingiva. Substantial improvement in the clinical esthetic aspect was observed when comparing contralateral areas in the same patient (Figs. 8A to 8F).



Figure 7 - A) Implant with partial thread exposure. **B)** Gingival graft. **C)** Flap suture. **D)** Postoperative follow-up at 11 months.



Figure 8 - A) Generalized gingival recession. **B)** Free gingival graft. **C)** Postoperative follow-up at 6 months. **D)** Generalized gingival recession (contralateral side). **E)** Flap suture. **F)** Postoperative follow-up at 6 months.

DISCUSSION

Gingival recession and lack of attached gingiva are two factors that can require surgical correction. Several techniques can provide a satisfactory solution to such problems. In order to treat localized gingival recessions, the laterally sliding flap⁶ has been widely recommended as the technique of choice, while the most predictable technique especially proposed to resolve the problem of generalized gingival recession⁷ is the subepithelial connective tissue graft⁸. With regards to attached gingiva, the classic surgical solution is free gingival graft^{1,2}, although other techniques indirectly aimed at resolving gingival recession, also promoted modification in the width of attached gingiva, especially muscular insertions in areas with no attached gingiva, require search for solutions to such limitations. Thus, in 2002, our group proposed a modification in the free gingival graft technique⁴. The proposal involved combining the free gingival graft with the

This article aimed to demonstrate only through clinical documentation, that the modification presents best results when compared with the traditional free gingival graft. Thus, our study has been ongoing with the objective of comparing the results of cases submitted to the classic treatment of free gingival graft and the recently denominated subepithelial gingival graft according to periodontal parameters.

CONCLUSIONS

According to clinical cases presented, the subepithelial gingival graft can be considered a superior option compared to the traditional free gingival graft alone, although other comparative studies are required to confirm its advantages.

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