 Therapy of gingival recessions using laterally positioned flap plus connective tissue graft: Case reports.

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INTRODUCTION

The gingival recession (GR) is the apical migration of the gingival margin beyond the cementum enamel junction, and recent surveys showed that 88% of people over 65 years and 50% of people with age beyond the cementum enamel junction, and recent surveys showed that 88% of people over 65 years and 50% of people with age

ABSTRACT

Background: Gingival recession is an usual clinical condition with a multifactorial etiology, and its surgical treatment aims to improve aesthetics through root coverage, reducing dentin hypersensitivity, minimizing the risk of cervical caries, and increasing keratinized tissue. Objective: The aim of this study was to report the therapy used for two clinical cases of gingival recession in lower incisors. Methods: Miller class III and II gingival recessions were treated using the lateral flap associated with the connective tissue graft, with the maintenance of a keratinized tissue band in the tooth adjacent to the recession. Results: After 6 months a partial root coverage was obtained in the first case, above 70%, and complete root coverage at second case, with increase of keratinized tissue in both. Conclusion: The lateral flap associated with a connective tissue graft showed an effective technique, with good results in root coverage, gain of keratinized tissue, reduction of hypersensitivity and satisfactory esthetics in the treatment of Miller’s class II and III gingival recession.

KEY WORDS:
Gingival recession; Esthetics; Connective tissue.

CASE REPORTS

The case reports were previously submitted and approved by the Research Ethics Committee of the Federal University of Juiz de Fora under the number 14111619.6.0000.5147.

Case Report 1.
Female, 43 years old, non-smoker without significant systemic changes, who finished orthodontic therapy about 2 years ago, with an aesthetic complaint and worried about possible tooth loss. Periodontal conditions were clinically assessed using the North Carolina periodontal

Several modifications from the first report of LPF, such as marginal tissue exclusion and partial flap thickness have been described in order to reduce the risk of recession and dehiscence at the donor site. Since then, the technique has been reported as a treatment option for localized recession defects, resulting in increased KT and high degrees of root coverage(7).

Tissue healing in GR with use of LPF shows the formation of long junctional epithelium and connective tissue with parallel fibers along previously exposed root surfaces(8)

The LPF has a good aesthetic results, with the increased of KT and reduced root sensitivity. However, limitations of this technique include shallow vestibule, little inserted gum, and very wide recessions with root prominence(9). LPF is an option for root coverage in localized GRs and has good results, with complete coverage of class I and II recessions in 62.5% of cases and partial coverage in 94%(10). The efficacy of LPF were evaluated among 120 patients with Miller class I and II GR and achieved 96% partial RC and 80% complete root coverage(11).

Root coverage in Miller class III recessions, although with lower predictability, shows values between 54 and 85%, and has its potential increased with the association of the CTG(12). Using also the CTG + CAF or LPF, Cesar Neto et al (2019)(13) showed an average coverage of 74% in class III recessions and Lee et al (2014)(14) using LPF + CTG, also in class III recessions, showed coverage between 60 and 95%.

Keratinized tissue gain is also an aim of mucogingival surgeries and the use of CTG enhances this increase that was reported in a systematic review of Miller class I and II GR therapy(15).

LPF is an option among mucogingival surgical techniques, which good results in root coverage and keratinized tissue gain. Thus, the aim of this study was to report two clinical cases of localized GRs using LPF associated with the CTG, and discuss the technique and the results obtained.

INTRODUCTION

The gingival recession (GR) is the apical migration of the gingival margin beyond the cementum enamel junction, and recent surveys showed that 88% of people over 65 years and 50% of people with age between 18 and 64 years have at least one site with GR(1).

GR has a multifactorial etiology and may be associated to periodontal disease, mechanical forces such as trauma due to inadequate tooth brushing or occlusal trauma. Iatrogenic factors such as uncontrolled orthodontic movements, poorly adapted partial dentures, and / or anatomical factors such as gingival biotype, aberrant frenulum attachments, presence of dehiscence and fenestration are also related. The diagnosis and control of these etiological factors are essential for the therapy of lesions that affect the mucogingival complex(2).

The gingival recessions (GRs) result in exposure of the root, and their surgical treatment aims at aesthetic correction through root coverage, reduction of dentin hypersensitivity, minimizing the risk of cervical caries, and increase or create keratinized tissue (KT). The surgeries to increase KT generally allow for easily predictable results, and the prognosis of surgeries to obtain root coverage is excellent for GR Miller classes I and II, whereas for classes III or IV only partial root coverage is expected. The selection of a surgical technique depends on several factors, such as the size of the recession, the presence or absence of KT adjacent to the recession, the width and height of the interdental soft tissue, and the depth of the vestibule, among others are related to the patient(3).

The main mucogingival surgical techniques include the use of the free autogenous gingival graft, which are best indicated for KT gain, but with unfavorable aesthetic results and low predictability of root coverage. The coronally positioned flap (CAF) or laterally positioned flap (LPF) isolated or associated with connective tissue graft (CTG), acellular dermal matrix, enamel matrix derivatives and guided tissue regeneration have the best indications to root coverage(4). The most frequently used variable to evaluate the clinical results is the amount of root coverage obtained, expressed as the difference between the baseline clinical attachment loss and the final data, and the percentage of complete root coverage(5).

The best clinical results are obtained with CAF associated with CTG, considered the gold standard technique for having high predictability of root coverage(6) due to both flap and periosteum nutrition(5). CAF is the first choice for root coverage when there is adequate KT close to the recession defect. However, some local anatomical conditions may hinder the use of this technique, such as the absence of KT, the presence of a very shallow vestibule and frenulum attachments, and the LPF technique may be indicated(6).
classification, location
a complete root coverage depends on some factors, such as defect
the KT. However, the success rate of these techniques in order to obtain
the potential to correct GR defects by increasing the height and width of
the trap-door technique (13) of this tooth. A connective tissue graft of the palate was obtained with
and then a partial thickness flap was made from the mesial of tooth 43
mesial and distal surfaces = 2mm. The patient’s periodontal phenotype
radiographic image (“Figure 1b”). The probing depth (PD) on buccal,
absence of KT (“Figure 1a”), and with a visible proximal bone loss on
10 mm, Miller class III and Cairo class II, almost complete root exposure,
probe (PC PUNC 15, Hu Friedy, IL, USA). The tooth 41 showed a GR =
(aesthetic demands (3). Several mucogingival surgical approaches have
improves the clinical results in root coverage(3). Thus, in the two reported
treatment.

Case Report 2
Female, 29 years old, non-smoker without significant systemic
changes, with an aesthetic complaint and with a slight dentinal sensitivity,
related to the tooth 31. Periodontal conditions were clinically assessed
using the North Carolina periodontal probe (PC PUNC 15, Hu Friedy, IL,
USA). The tooth 31 showed a GR = 8 mm and PD = 1 mm on the buccal
surface. Miller’s class II and Cairo class I, absence of KT (“Figure 2a”),
and with a slight loss in the bone proximal crests (“Figure 2b”). The PD
on buccal, mesial and distal surfaces = 2 mm. The patient’s periodontal
phenotype is thick.

Scaling and root planning was performed with a Gracey 5-6 curette
and then a partial thickness flap was made from the mesial of tooth 33
to the mesial of tooth 32, preserving a margin of KT on the buccal face
of this tooth (“Figure 2c”). A connective tissue graft obtained from the
palate was obtained using the trap-door technique that was fixed to the
root of tooth 31 with Vicryl 5-0 suture (“Figure 2d”). Subsequently, the
flap was positioned laterally over the graft and fixed with 4-0 silk thread (“Figure 2e”), which was removed 10
days later. Postoperative care included 0.12% chlorhexidine mouthwash
and use of analgesic and anti-inflammatory drugs. The use of pre-surgical
anti-inflammatory drugs reduces morbidity after surgery, confirmed by the slight
discomfort in the palatal area, reported by the patient. “Figure 1d” shows
the postoperative period at 15 days, and “Figure 1e” at six months,
showing partial coverage (over 70%, with a final GR = 3mm), and KT
increase (gain of 4 mm). At the final clinical examination, the PD on the
buccal surface was 1 mm, and in others surfaces = 2 mm.

DISCUSSION
The GR causes exposure of the root surface, resulting in dentinal
hypersensitivity, shallow carious lesions, cervical abrasions and
aesthetic demands(6). Several mucogingival surgical approaches have
the potential to correct GR defects by increasing the height and width of
the KT. However, the success rate of these techniques in order to obtain
a complete root coverage depends on some factors, such as defect
classification, location(10,11); extent, availability of apical or lateral KT, and
technique used(12).

The root coverage has numerous advantages, such as improved
aesthetics, root protection against greater abrasion, and decreased dentin
hypersensitivity(3). In the two reported cases, the choice for the treatment
of GR was the LPF associated with the CTG due to the presence of class
II and another Miller class III recessions, both with no apical KT to the GR,
which difficult the use of CAF, considered the gold standard technique(6).

Root chemical conditioning aims to decontaminate and demineralize
its surface, exposing the collagenous matrix of dentin and cementum,
including citric and phosphoric acids. However, the results obtained with
root demineralization have been controversial. In a study of patients
with GR who were treated with CAF + CTG, the use of citric acid root
conditioning did not determine significant differences in root coverage and
KT increase(15). There is no clear evidence that the use of root conditioning
improves the clinical results in root coverage(15). Thus, in the two reported
cases no root chemical conditioning was performed, only mechanical root
treatment.

In clinical examination after 6 months, both areas had an increase
of KT, and this fact may be justified by the associated use of the LPF
and CTG technique, as described by Chambrone et al (2008)(12) who
reported greater KT width gain with the use of CTG, providing significant
root coverage and clinical attachment level increase, also corroborated by
Zucchelli and Mounssif (2015)(10).

The root coverage obtained after 60 days was 70% in case 1 that
showed a GR with 10 mm and almost complete root exposure, and 100%
in case 2 which had an 8 mm recession, and these clinical appearances
were maintained at 6 months. These root coverage results were
associated with depth to shallow probing and absence of bleeding on
probing. In case 1, partial coverage was obtained, which is consistent
with the literature showing less predictable results in class III GR, with
only partial defect coverage(3, 10, 11). In case 2, a class II GR, the complete
coverage was obtained and is also in agreement with studies showing this
possibility in this kind of periodontal defect(6).

The use of LPF associated with CTG is very effective in therapy of
localized GRs, ensuring proper aesthetics, effective root coverage and
decreased sensitivity. The success of this surgical technique was directly

Figure 1.

Figure 2.

Figure 3.
related to the appropriate gingival conditions of the lateral donor tooth, allowing for a highly effective and predictable surgical technique.

CONCLUSION

The LPF plus CTG has been shown to be an effective technique for the therapy of Miller’s class II and III GRs, allowing root coverage and increase of KT.

CLINICAL RELEVANCE

A surgical treatment for gingival recessions using the laterally positioned flap in two clinical cases provides aesthetic and functional increase, through root coverage and keratinized tissue augmentation, as shown in the clinical results. These cases report aims to contribute to the clinical practice of Periodontics, reporting that the described technique can be a good choice for cases of located gingival recessions.

CONFLICTS INTERESTS

There are not conflicts of interest or financial support for this study.

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