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CLINICAL REPORT



Coronally advanced flap with connective tissue graft for the treatment of multiple recession defects: Case Report.

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ABSTRACT

Mucogingival deformities are a group of conditions that affect many patients, having an impact on function and esthetics; they can be congenital, developmental, or acquired. Gingival recession is defined by the American Academy of Periodontology as the location of the gingival margin apical to the amelocemental junction. They can be localized or generalized and include one or more sides of the tooth. Among the treatments, subepithelial connective tissue grafting and acellular dermal matrix can be considered, whose objectives are root coverage and keratinized tissue width. Case report: A 54-year-old female patient diagnosed with mucogingival deformities around the tooth, was treated with subepithelial connective tissue graft to obtain root coverage in recessions RT2 and RT3. Conclusion: The purpose of using a bilaminar technique where a flap is made, and a connective tissue graft is placed to cover gingival recessions is to obtain better esthetic results.

KEY WORDS:

Mucogingival surgery; Gingival recession; Connective tissue.

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INTRODUCTION:

Mucogingival deformities are a group of conditions that affect many patients, having an impact on function and esthetics; they can be congenital, developmental, or acquired. According to this concept, gingival recessions belong to this group.

Gingival recession is defined by the American Academy of Periodontology as the location of the gingival margin apical to the cement-enamel junction (CEJ)⁽¹⁾. They can be observed localized or generalized and include one or more sides of the tooth, being considered a common clinical situation, affecting more than 70% of the human population⁽²⁾.

The different factors that cause this type of conditions are, the inflammation associated with the presence of biofilm and traumatic tooth brushing, although they could also be related to occlusal trauma, tooth position in the dental arch, the anatomy of the alveolar ridge and smoking⁽³⁾.

Among the most widely used classifications are those proposed by Miller (1985) and Cairo (2011); the latter divides gingival recessions into three groups where RT1 is presented as a gingival recession without loss of interproximal insertion junction, and in which the proximal CEJ is not visible; RT2, there is a gingival recession with loss of interproximal junction. The proximal loss is less than or equal to the vestibular loss, measured from the amelocemental boundary (proximal and vestibular) to the bottom of the pocket and finally RT3 in which the proximal loss is greater than the vestibular loss, measured from the CEJ to the bottom of the pocket. This classification uses the level of proximal insertion as a fundamental parameter⁽⁴⁾.

To evaluate the prognosis of a root coverage technique, the position of the interproximal tissue is considered, so, if a loss of height of the interdental papillae is observed in the tooth to be treated, the percentage of complete root coverage may be diminished⁽⁵⁾.

Zucchelli et al. describes a method for predetermining the maximum root coverage level (MRC) which can predict the position of the soft tissue margin after a root coverage procedure focusing on non-carious cervical

lesions (NCCL)⁽⁶⁾. The most common mucogingival surgery procedures for root coverage are:

- Subepithelial connective tissue grafts: currently considered the most effective option for obtaining predictable root coverage with a high esthetic level. The technique combines a flap that covers the graft and a vascular bed thus ensuring the nutrition of the graft, achieving root coverage with high predictability^(7,8).

- Acellular dermal matrix: an allograft has been widely used as a substitute for autogenous grafts in mucogingival surgeries, allowing the increase the amount of attached gingiva around the teeth^(9,10).

The aim of the present study is to report a clinical case of a female patient, diagnosed with mucogingival deformities around the tooth, which were treated with a coronal positioned flap in combination with connective tissue graft.

CASE PRESENTATION:

A 54-year-old female patient, whose chief complaint was the presence of "uncovered roots" in her upper teeth (10 to 14). During the clinical interrogation, she referred to have diabetes mellitus type II controlled with Metformin, for which she was classified as an ASA type II⁽¹¹⁾. After the clinical and radiographic analysis, she was diagnosed with mucogingival deformities around teeth in pieces 10 to 14 which were classified according to the new classification of mucogingival and gingival recessions from the new classification of periodontal and peri-implant disease and conditions from 2017, (Figure 1)⁽¹²⁾.

Placement of connective tissue graft from pieces 10 to 14.

a) Hygienic phase

Selective scaling and root planning, plaque control and brushing technique were performed. An inter-consultation was made with the restorative postgraduate course to carry out cervical restorations prior to

Classification of mucogingival conditions (gingival phenotype)						Classification of mucogingival conditions (gingival phenotype)					
10	REC	GT	KTW	CEJ (mm)	Step (mm)	12	REC	GT	KTW	CEJ (mm)	Step (mm)
RT1						RT1					
RT2	2 mm	2 mm	3 mm	A	-	RT2	4 mm	2 mm	2 mm	A	-
RT3						RT3					

Classification of mucogingival conditions (gingival phenotype)						Classification of mucogingival conditions (gingival phenotype)					
11	REC	GT	KTW	CEJ (mm)	Step (mm)	13	REC	GT	KTW	CEJ (mm)	Step (mm)
RT1						RT1					
RT2	2 mm	2 mm	3 mm	A	-	RT2	3 mm	2 mm	2 mm	A	-
RT3						RT3					

Classification of mucogingival conditions (gingival phenotype)					
14	REC	GT	KTW	CEJ (mm)	Step (mm)
RT1					
RT2					
RT3	3 mm	2 mm	3 mm	A	-

Figure 1: Diagnosis according to the new classification of mucogingival and gingival recessions

the surgical phase (Figure 2a).

b) Preparation of the recipient site

To prepare the recipient site, incisions were made using the coronally advanced flap procedure for the treatment of multiple recession defects performed by Zucchelli (Figure 2b), considering the canine as the axis of rotation (Figure 2c), the flap was reflected with a 15C blade, and the partial-total-partial thickness flap was made (Figure 2d), subsequently the interdental papillae were de-epithelialized. In this case, no type of root conditioning was performed.



Figure 2: a) initial, b) design of the flap, c) incisions, d) split-full-split thickness flap elevation

c) Donor site (connective tissue graft)

The donor site of the gingival graft was the palate of the patient, the technique of Zucchelli (2010) was used, making two horizontal incisions joined by two vertical ones, taking a free gingival graft and later de-epithelialized outside the mouth, with dimensions of 30mm x 5mm, the graft was placed in serum to avoid dehydration and the donor area of the palate was sutured with cross stitches, black silk 4-0, to control bleeding.

d) Placement of the graft in the recipient site

Once the free gingival graft was taken from the palate, it was positioned with sling suture with 6-0 Vycril (Figure 3).



Figure 3: a) try on of the harvested connective tissue graft, b) fixation of the graft with sutures c) flap sutured d) follow up at 7 months

e) Postoperative management

Ibuprofen 600 mg, 1 tablet every 12 hours for 5 days, Amoxicillin 500 mg, 1 tablet every 8 hours for 7 days and 0.12% chlorhexidine rinses

every 12 hours for 1 minute for 7 days were prescribed. The patient was instructed not to perform physical activities; soft and low-fat food; not to expose herself to high temperatures.

f) Re-evaluations

Sutures were removed after 15 days. Control appointments at 1 week, 2 months and 7 months. A good healing of the graft to the tissues was observed, as well as a partial coverage of the operated site (Figure 4).



Figure 4: a) initial, b) 7 months follow up after restorative treatment

DISCUSSION AND CONCLUSION

Tavelli et al. performed a systematic review comparing the tunnel technique (TUN) and the coronal advances flap (CAF) and found that the CAF obtained better results in coverage and seems to be associated with a higher percentage of root coverage than TUN when the same grafts (connective tissue or acellular dermal matrix) are used in both techniques⁽¹³⁾.

Bherwani et al. compared the clinical efficacy of the CAF and the TUN with subepithelial connective tissue graft for multiple gingival recessions, where they evaluated 75 recession defects (Miller class I or II, 39 test sites and 36 control sites). The result was that the CAF is effective for the treatment of multiple adjacent recessions in terms of root coverage and keratinized tissue gain, regardless of the number of defects, and does not require an additional surgical site, as in the TUN⁽¹⁴⁾.

Azaripour et al. within their research compared the CAF with the modified microsurgical tunnel technique (MMTT) for the treatment of Miller class I and II recessions. They recruited 40 patients with 71 gingival recessions and randomly assigned to CAF or MMTT. A connective tissue graft was applied in both groups. Clinical evaluations were performed at 3, 6 and 12 months, obtaining as a result that both techniques are equally successful in covering Miller class I and II gingival recessions, with high esthetic results⁽¹⁵⁾.

The purpose of using a bilaminar technique where a flap and placement of a connective tissue graft is performed for the coverage of gingival recessions, is to obtain better esthetic results. Although in comparison, both techniques, tunnel, and coronal positioned flap, present a high percentage of success.

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CLINICAL RELEVANCE:

Our case report aims to present a clinical case of bilaminar technique for root coverage, consisting of a coronally positioned flap with connective tissue graft in multiple recessions defects, RT2 and RT3 of Cairo following the technique described by Zucchelli and De Sanctis with a follow-up at 7 months.

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CONFLICTS OF INTERESTS

There are no conflicts of interest on the part of the authors.

ETHICS COMMITTEE

This case report was made in full compliance with the established standards for informed consent designed by the Committee on the Rights of the Patient and his Family, CSG-PRF, FOUANL 2014. Under NOM 004 SSA3-2012 of the Clinical Record, NOM 013 SSA2-2006 Prevention and control of oral diseases and NOM 006 SSA3 2011 for the practice of anesthesiology. The patient voluntarily authorized the use of intraoral and extraoral photographs for academic and scientific use.

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