Periodontal Plastic Surgery: Treatment of a Gingival Recession using a Tunnelling Technique, Connective tissue graft and amelogenins
A clinical case report

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Abstract
The therapeutic approach to gingival recession requires a treatment plan involving basic therapy, which will focus on its etiologies and the most suitable periodontal plastic surgery treatment in each specific case. The Oral Biofilm control, previous periodontal stabilization, the use of magnification and microsurgical instruments to handle the tissues, bilaminar blood supply for the connective tissue graft, the release of the lower anterior frenulum, the root conditioning with enamel matrix derivative proteins, suture without tension and patient cooperation were key factors in the treatment outcome obtained. The aim of this paper is to present a clinical case of a gingival recession defect treated using a tunnelling technique with a connective tissue graft and amelogenins and its evaluation.

Introduction
Gingival recession (GR) has been defined as the exposure of the tooth root caused by the migration of the gingival margin to a point apical to the cemento-enamel junction. It can appear in its localized or generalized form and frequently compromises dental and gingival aesthetics, and causes dental hypersensitivity (1,2).

GR has a multifactorial etiology associated with different types of factors that aid their development. It has been demonstrated that at least four groups of factors can be associated with the development of GR: anatomical factors (lack of keratinized gingiva, muscle insertion close to gingival margin, inadequate tooth alignment, thin or absent vestibular table, prominent root); factors relative to inflammatory disease (Gum disease because of plaque build-up, Periodontitis); factors relative to iatrogenesis (e.g. prosthetics, orthodontic treatment); factors relative to trauma (traumatic brushing or other mechanical traumas) (3).

The elimination of causal factors and the detailed explanation provided to the patient are as important as the periodontal plastic surgery technique to implement (4-6).

According to the first European Periodontal meeting consensus in 1994 the indications for GR treatment are:
- Improvement of oral hygiene (prevention of gingivitis and root caries);
- Esthetic or orthodontic concerns;
- Hypersensitivity.

The root exposed in a GR is not necessarily compromising the tooth survival if the remanent bone is preserved and the oral biofilm is controlled. However, from a periodontal point of view, it is indicated to treat it when is progressive and/or difficult a correct oral hygiene (Freedman and cols, 1999).

In the last decades many surgical techniques for the treatment of GR have been developed (Sullivan & Atkins 1968, Langer & Langer 1985, Raetzke 1985, Allen 1994, Zabalegui 1999 among others).

The most widely accepted classification of gingival recession is Miller’s. It is based on the root apical gingival margin of the recession regarding the mucogingival junction, and on the amount of tissue loss (gingiva and bone) in interproximal areas adjacent to the recession site (7).

Complete coverage is achieved when the gingival margin is placed at the same level as the cemento-enamel junction, the gingival sulcus has a probing depth lower than 2 mm and when there is no bleeding on probing (9). The outcome of surgical treatment of gingival re-
cession is expressed as success (i.e. the aver-
age percentage of root that has been covered).
The type of recession according to Miller’s class-
fication influences the outcome of the surgical procedure. Factors related to the
surgical technique used - tissue tension, flap
thickness - may also influence the treatment
results (Pini Prato et al. 2000).

This paper reports a clinical case of a 6
months follow up after a modified coronally
advanced tunnel and connective tissue graft
(Subepithelial) + enamel matrix derivative proteins (Straumann Emdogains) to treat a
multiple lower anterior gingival recession.

Clinical case description

A systemically healthy 35-year-old female pa-
tient, a nonsmoker, was referred to our Clinic.
Her chief complaints were root sensitivity,
discomfort and pain when brushing the lower
anterior teeth.

The patient underwent orthodontic treat-
ment between 2005 and 2009. The symp-
toms she relates started after such treatment.
Upon examination, the following was ob-
served on lower anterior sextant:

Miller’s class II gingival recession in tooth #9
that showed a 2,5mm width and 4mm depth,
Class I #41,32 showing 2 mm x 2mm.

A sub-epithelial connective tissue graft
(SCTG) was taken from the palate. The single-
incision technique was used to remove the
graft (Fig. 8) and soaked in EMD for 5 min-
utes. The donor area was sutured with suture
5/0 Soporin.

The SCTG was introduced into the recipient
site and fixed using 7-0 and 6-0 Proleene su-
ture.

The surgical approach has the advantage
of not incising into or reflecting many of
the papillae within the surgical site, thereby
minimizing the risk of losing papilla height in
critical areas.

The surgical procedure was performed under
local anesthesia. Scaling and root planning
was performed at all teeth scheduled for root
coverage. Thereafter, a mucoperiosteal flap
was raised using several tunneling knives be-

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Figure 1. Initial Situation. Lower Anterior Sextant.

Figure 2. Post-Oc situation after Basic Periodontal
treatment.

Figure 3. Pre-Oc situation lower Anterior sextant.

Figure 4. Two Weeks after starting with basic treatment

Figure 5. Pre- Surgical situation lower Anterior Sextant.

Figure 6. Post-Oc Situation after 44 days. Prior to su-
ture removal. Good tissue blending and colour were
observed

Figure 7. Preparation of the recipient site according to the

Figure 10. Post-Op Situation after 14 days. Prior to su-
ture removal. Good tissue blending and colour were
observed

Figure 11. Post-Op Situation after 14 days. Prior to su-
ture removal. Good tissue blending and colour were
observed

Figure 12. Follow up 6 months.

Figure 13. Follow up 6 months. Occlusal view

Figure 14. Comparative initial to 6 months situation

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