Management of gingival recession defects - a case report

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Introduction

Gingival recession, referring to the exposure of the root of a tooth caused by loss of gingival tissue and/or apical displacement of the gingival margin from the cemento-enamel junction (Wennström 1996), is a common clinical observation. According to Kasah et al. (2005), more than 50% of the population exhibits gingival recessions. Gingival recession has a multifactorial etiology associated with anatomical factors or pathological factors (Figure 1). Plaque-related inflammation and traumatic brushing have been considered primary or triggering factors in gingival recession. Furthermore, predisposing factors have also been identified: bone fenestration and dehiscence, position of the tooth within the dental arch, thickness of the marginal gingiva, high attachment of the labial frenulum, and iatrogenic factors (uncontrolled orthodontic movement related to force, direction, or dental tipping and inappropriate restorations).

Gingival recessions can be localized or generalized, involving one or more tooth surfaces. Among various classifications proposed to describe the clinical features of gingival recessions, Miller’s classification (Miller 1985) of gingival recession is probably the most widely used. This classification, based on (i) the height of the interproximal papillae and interdental bone adjacent to the defect area, and (ii) the relation of the gingival margin to the mucogingival junction (Figure 2), allows for a relatively reliable prediction of the outcome of treatment.

The exposure of the root surface is generally associated with aesthetic issues, a radicular hyperesthesia as well as difficulties to maintain an optimal buccal dentifrice. When tooth mispositioning is a contributing factor, appropriate consideration to the treatment outcome.

The management of gingival recession is based on a thorough assessment of the degree of tissue involvement and the etiological factors. The control of the causative factors in the development of gingival recession should always be addressed during the initial treatment phase and will in most cases prevent further progression of the recession. Vigorous brushing should be avoided by advising patients to carry out an appropriate brushing technique (i.e. modified Bass technique) with a soft/medium toothbrush, a less abrasive dentifrice. If tooth mispositioning is a contributing factor, appropriate consideration to orthodontic correction should be considered. If the recession is related to a piercing, its removal should be recommended.

If the recessions have been successfully stabilized by identifying and avoiding causative factors, and by eliminating hyperesthesia, no further treatment might be needed. However, in cases of objectionable aesthetic alterations, progressive recessions, or increased hyperesthesia, surgical correction using gingival plastic surgical techniques such as gingival grafting should be considered.

The objectives of gingival grafting are (i) to provide a degree of root coverage and (ii) to enhance the amount of keratinized attached gingival tissue around the tooth. While the latter of these two objectives is very predictable, the amount of root surface coverage may vary depending on the severity of the recession defect. Periodontal plastic surgery is technique sensitive and involves delicate handling of the mucogingival tissues, demanding a great dexterity of the surgeon, a selection of specific instruments and innovative surgical and suturing approaches. The use of magnification and microsurgical instruments to handle the tissues improves vascularization of connective tissue grafts and increases root coverage compared to macrosurgical techniques (Burkhart & Lang 2005, Cortellini et al. 2007).

Two main types of periodontal plastic surgical procedures have
been described in the literature to treat the gingival recessions.

- Pedicle soft tissue graft procedures

A pedicle graft involves repositioning donor tissue from an area adjacent to the recession defect to cover the exposed root surface (coronally advanced flap, laterally sliding flap, flapapillary flap, tunneling technique). These techniques have many advantages as no second surgical site is needed and as the flap retains its own vascularization from the base of the flap. To minimize tissue trauma and thus improve the aesthetic result, these surgical techniques have over the years been modified and improved (Bartke et al. 1985, Allen 1994, Brunzoni 1994, Zucchelli and De Sanctis 2000).

The use of enamel matrix derivatives (EDM, Emdogain®) in conjunction with a coronally advanced flap procedure increases the rate of success and predictability (Cairo et al. 2008. L6). Free soft tissue graft procedures

A free soft tissue graft is indicated when there is no accept-able donor site present in the area adjacent to the gingival re-cession defect or when a thicker marginal tissue is desirable. This surgical approach requires a donor site, which is usually the maxillary palatal mucosal tissue. The commonly used graft techniques include (i) an epithelialized graft (Figure 3) and (ii) a subepithelial connective tissue graft (Figure 4) placed either with a pedicle or using a tunneling technique. Connective tissue grafts substitute materials like Geistlich Mucograft® (Sanz et al. 2009, Arora et al. 2015) may be useful in situations where a large recession defect needs to be treated and graft tissue harvested from the palate would provide an insufficient volume of tissue (Figure 5).

The outcome of surgical treatment of gingival recession is commonly expressed as success rate (i.e., the average percentage of root that has been covered). The type of recession according to Miller's classification influences the outcome of the surgical procedure. Factors related to the surgical technique used (tissue tension, flap thickness) may also influence the treat-ment results (Pai Prato et al. 2000, Hwang et al. 2006). Many authors consider that gingival grafting is less successful in smokers than in non-smokers (Trobbelmi et al. 1997, Bocuccio et al. 2002, Erley et al. 2006)

The present article reports a clinic-