

Treatment of Localized Gingival Recession Using Gingival Unit Grafts with a Two-year Follow-Up: Case Report

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Abstract

Gingival recession is the apical movement of the marginal gingiva from the cemento-enamel junction and it results in exposed root surfaces, which cause tooth sensitivity and aesthetic issues. Several methods can be performed for the surgical management of the recession defects of gingiva. A gingival unit graft (GUG) may result in predictable root closure and keratinized tissue improvement and it has shown successful results in gingival recession defects of Miller's class I and II. In this case report, we aimed to present the management of a localized gingival recession of a Miller class II defect with a GUG. A 20-year-old woman with gingival recession and hypersensitivity on left lower second premolar (#35) was referred to our periodontology department. After intraoral examination, gingival recession of Miller's class II defect was observed on #35. The GUG technique was considered for treatment. At baseline, six months and two years following the surgery, clinical measurements showed the efficacy of GUGs in improving soft tissue parameters in gingival recession cases of Miller's class II.

Keywords: Root coverage, gingival unit graft, gingival recession

INTRODUCTION

Gingival recession is the apical migration of the marginal gingiva from the cemento-enamel junction and it results in exposed root surfaces, which cause tooth sensitivity and aesthetic issues.¹ Several methods can be performed for the surgical management of the recession defects of gingiva. Most common among these are free gingival grafts (FGG), connective tissue grafts, different types of pedicle flaps and guided tissue regeneration. Each surgical method offers various success rates. However, further studies are necessary in order to identify issues associated with predictable and successful outcomes.^{2,4}

Nabers⁵ described FGG as a common gingival augmentation procedure according to its relative ease on increasing keratinized tissue width. However, this technique has several limitations. Compared to other surgical methods, using a FGG in the treatment may lead to a significant color difference among the grafted tissue and the neighboring gingiva.⁶ Allen⁷ defined the gingival unit graft (GUG) as a modification of the FGG

in 2004. The palatal graft which is harvested as a GUG also includes marginal gingiva and interdental tissue, and so differs from FGG.⁷

One of the major points for the success of soft tissue grafts is the relationship between the vascular formation and the related tissues. Gingiva has a complex and unique vascularity. In soft tissue graft procedures, the donor tissue is designed to survive and function especially over root surfaces which are avascular, by including the marginal gingiva and papillae.⁷ The existence of the gingival margin and papillary tissue in the graft can stimulate the recovery process, and result in the closure of recession defects and the color adaptation with neighboring gingival tissues.^{2,8,9}

In many studies, the GUG technique has shown successful results in gingival recession defects of Miller's class I and II.² In this report, we aimed to present a case of the management of a localized Miller's class II gingival recession defect with a GUG.

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CASE PRESENTATION

A 20-year-old woman with gingival recession and hypersensitivity on the left lower second premolar (#35) was referred to our periodontology department. On intraoral inspection, a Miller's class II gingival recession defect in relation to #35 was detected, with a vertical recession depth of 3 mm, a pocket depth of 1 mm and keratinized tissue width of 0.5 mm (Figure 1). As there was a deficiency of keratinized tissue observed, the GUG technique was considered. Clear information was given to the subject about the treatment procedure and an informed consent for surgery and photographs were obtained. After performing local anesthesia, two vertical incisions were made in the recipient area, expanding apically and extending 3 mm beyond the mucogingival line, then split-thickness flap was reflected and interdental papillae was de-epithelized. After scaling and root planing the exposed portion of the root surface, it was rinsed with saline. A split-thickness graft with approximately 1 mm thickness, extending to the interdental papillae and marginal gingiva, was harvested from the left premolar region of palate (Figure 2, 3). After contouring and adapting, it was auto-transplanted to the recipient bed (Figure 4). The patient was instructed regarding their oral hygiene conditions, prescribed an antibiotic (amoxicillin-clavulanic acid) for 5 days and chlorhexidine rinse for 2 weeks. The healing was uneventful over 14 days (Figure 5). After 6 months of recovery, the patient was re-called and a vertical recession depth of 0.5 mm, a pocket depth of 1 mm and keratinized tissue width of 6 mm was observed by clinical measurements (Figure 6). The second-year examination showed no difference among these measurements compared to the clinical values at the sixth month (Figure 7).

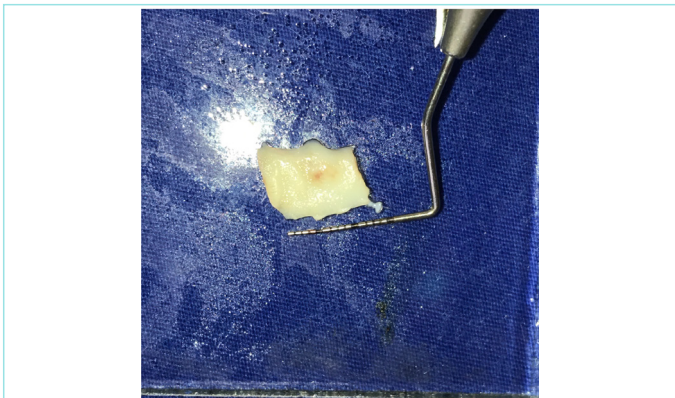


Figure 3. Gingival unit graft.



Figure 4. Graft sutured to the recipient site.



Figure 1. Initial clinical view of recession.



Figure 5. Two weeks after surgery.



Figure 2. Harvesting from donor site.

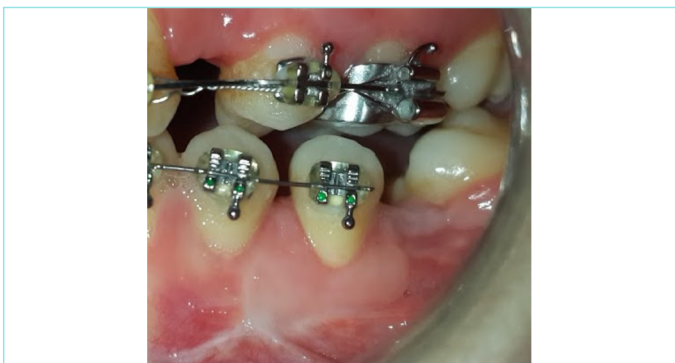


Figure 6. Six months after surgery.



Figure 7. Two years after surgery.

DISCUSSION

This case report with a follow-up of 2 years shows the success of using a GUG in Miller's class II gingival recession cases with notable root coverage and a gain of keratinized tissue. There were no complications observed in the patient throughout the recovery period, neither at the recipient nor at the donor sites. As the patient started orthodontic treatment 5 months after the surgery, long-term results may differ from the normal course.

Conventional FGG was firstly applied in order to recover the deficiency of attached gingiva and shallow vestibular depth. Later on, it was applied to cover recession defects and achieve adequate keratinized tissue, especially if the patient had a reduced vestibular depth.¹⁰

One study compared the use of FGG and GUG in the management of localized gingival recessions. Eighteen patients with gingival recession on both sides were treated with either a unit graft or a conventional FGG on each side randomly. Clinical parameters defining the recession defect were measured initially and at the following first, third and sixth months. Both techniques showed remarkable improvements in clinical parameters. The GUG demonstrated a better healing index and root closure percentage, as well as giving improved aesthetic content to patients. However, the vertical recession depth was not found to be significantly higher.⁸

Another study compared GUGs with conventional palatal grafts in the management of localized gingival recessions. The probing depth, attachment level, width of keratinized tissue and the depth of vertical recession were measured before surgery and after 8 months. Both treatment procedures showed notable clinical improvements. In the comparison between the groups, the decrease in the depth of recession, the increase of attachment and keratinized tissue were found to be considerably lower in the FGG group.²

The gingival unit donor site was clinically recovered more successfully and with fewer complications in these studies. It was noted that some complications such as flap necrosis were not seen in GUGs, while they were frequently seen in subepithelial connective tissue grafts.¹¹

This case report shows that using a GUG may be a suitable treatment for the recession of Miller's class I and II defects. GUG procedures may have advantages when compared with the conventional FGG procedure, such as considerably better clinical measurements and aesthetic results. However, further clinical trials with longer follow-ups and a larger population are necessary.

MAIN POINTS

- Gingival recession is the apical displacement of the gingival margin from the cemento-enamel junction and the exposure of root surfaces.
- Gingival recession causes root hypersensitivity and aesthetic problems.
- Treatment methods of gingival recessions are various surgical procedures.
- The gingival unit graft technique may result in predictable root closure and keratinized tissue improvement on gingival recession.

ETHICS

Informed Consent: Clear information was given to the subject about the treatment procedure and an informed consent for surgery and photographs were obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: A.Ö., Design: A.Ö., Supervision: A.Ö., A.T., Materials: A.Ö., Data Collection and/or Processing: A.Ö., Analysis and/or Interpretation: A.Ö., Literature Search: A.Ö., A.T., Writing: A.Ö., Critical Review: A.Ö.

DISCLOSURES

Conflict of Interest: The authors have no conflicts of interest to declare.

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