

Complete Root Coverage in Millers Class III Isolated Gingival Recession using Free Gingival Graft – A 12 Month Follow Up Report

Jananni Muthu^{1,*}, Sivaramkrishnan Muthanandam², Jaideep Mahendra³

¹Dept of Periodontology,
²Dept of Oral Pathology &
Microbiology, Indira Gandhi
Institute of Dental Sciences,
Sri Balaji Vidyapeeth
(Deemed to be University),
Puducherry-607402.

³Dept of Periodontology,
Meenakshi Ammal Dental
College and Hospital,
Alappakkam Main Road,
Maduravoyal, Chennai,
Tamil Nadu 600095.

For Correspondence

*Dr. Jananni Muthu,
Email: jannpearl@gmail.com

Date of

Submission: 23-02-2018

Acceptance: 25-06-2018

Access this article online

Quick Response Code



<https://www.jbcahs.org>

ABSTRACT

Gingival recession is most commonly encountered periodontal problem. It is often complicated by inadequate attached gingiva and decreased vestibular depth. Free gingival autograft is the technique of choice in such complicated situations. This case report presents a Millers Class III recession with inadequate attached gingiva treated with free gingival graft and achievement of complete root coverage

INTRODUCTION

Gingival recession is defined as exposure of the root surface due to an apical shift of the gingival margin.¹ If untreated gingival recession can cause root caries and sensitivity. This can have adverse effects on patient behaviour and confidence.² Gingival recession can be classified as involving single tooth or multiple teeth. It can also be classified as deep narrow, deep wide, shallow narrow and shallow wide. Miller classified recessions into 4 classes.

Numerous treatment options are described in literature for treatment of single tooth recession. These include, free gingival autografts, connective tissue grafts, lateral pedicle flap, Tarnows technique for root coverage, double papilla flap³ etc. Selection of an appropriate technique depends on the width of attached gingiva. In case of recessions with inadequate width of attached gingiva, free gingival autograft or connective tissue graft is preferred, initially to increase the width of attached gingiva. One such case where both problems of inadequate width of attached gingiva and gingival recession is corrected by using free gingival autograft with 12 months follow up is discussed in this paper.

CASE REPORT

A 45 year old female patient reported to the department of Periodontology,

Meenakshi Ammal Dental College, Chennai with chief complaint of sensitivity and receding gums in relation to the lower front teeth region for the past 6 months. The patient had no systemic complications. Intraoral examination revealed inadequate width of attached gingiva and class III gingival recession in 31. Trauma from occlusion was present in 31 and this was diagnosed as cause of recession. The overall oral hygiene status of the patient was satisfactory.

Presurgically occlusal corrections were done in 31 to relieve trauma from occlusion. Scaling and root planning with plaque control instructions and patient education was completed. Patient was instructed to use soft bristled tooth brush and modified Stillman technique for plaque control. The patient was recalled 1 week after the initial therapy. The recession measured 6 mm apico coronally and 4 mm mesio distally. There was no attached gingiva evident (Figure 1a). To increase the width of attached gingiva and for root coverage, Free gingival autograft was planned as a single step procedure.

Preparation of recipient site: The surgical site was anaesthetised with local anaesthesia (Lignocaine, 1: 80,000 adrenaline). Horizontal incision was made at base of the interdental papilla on either side of 31. At the distal line angles on either side of 31, vertical

incisions were made extending into the sulcus. A split thickness flap was raised and excised apically. The interdental papilla on either side of 31 was deepithelialised. Between the bases of the two vertical incisions, a horizontal incision was given and the vestibule was deepened twice in depth to the desired width of attached gingiva (Figure 1b).

Procurement of donor tissue: The donor site, left side of palate between premolar and molar was anesthetized with local anaesthesia. A template of the recipient site was made with tin foil and transferred to the donor site. Incisions were given following the template. Care was taken not to exceed beyond the mesial side of first molar. Also incisions were given 3 mm away from the gingival margin (Figure 1c).

Incisions were made in such a fashion as to create the butt joint margin in the donor tissue. The incision was made along the occlusal aspect of the palate with no. 15 scalpel blade held parallel to the tissue, continued apically, lifting and separating the graft. Any glandular or adipose tissue on the under surface of the graft was trimmed. A uniform thickness of the graft of 1.5 – 2mm was maintained (Figure 1d). The graft was transferred to saline. Hemostasis of the palatal wound was achieved by use of Gelfoam and the wound was protected by a Hawley's appliance.

Graft transfer and stabilization: The graft was placed with connective tissue facing the recipient site and epithelium towards the outer side. The graft was tucked into the deepened vestibule, pressed firmly against the recipient site with moist gauze and stabilized with Oschenbein sutures making sure that no dead space is present between the graft and the

under surface (Figure 1e). The entire surgical area was protected by periodontal dressing.

Postoperative instructions: The patient was asked to take analgesic and antibiotics three days postoperatively. Patient was instructed that the periodontal dressing should be in place till suture removal. If the dressing gets dislodged within the period patient was asked to report back. Instructions were given not to brush on the surgical site and patient was asked to report after 2 weeks for suture removal.

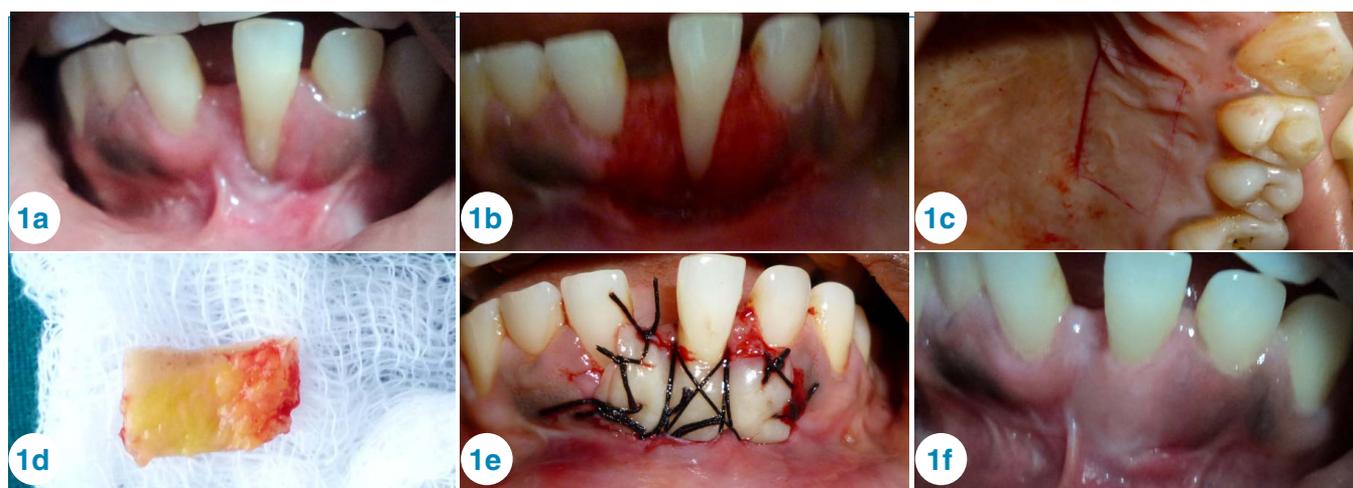
2 weeks postoperative: The periodontal dressing was removed and the surgical site was irrigated with saline. The sutures were removed and healing was satisfactory. The palatal wound healing was also satisfactory. Complete root coverage was attained and width of attached gingiva was 5 mm.

12 months follow up: The patient was recalled every 3 months and plaque control measures were reinforced. The increase in width of attached gingiva and complete root coverage remained stable at the end of 12 months (Figure 1f).

DISCUSSION

Gingival recession can pose problems like dentinal hypersensitivity, root caries and fear of tooth loss if left untreated.⁴ Of all techniques available for treatment of single tooth recession, free gingival autograft is advantageous as it can achieve root coverage as well as increase width of attached gingiva. This procedure was introduced by Bjorn *et al* which is used widely. Studies have also demonstrated long term stable results with free gingival graft.⁵

Figure 1: a-f. Free gingival graft in relation to 31



In Millers Class I and II recessions, percentage of root coverage with free gingival graft varies from 90 - 100%.⁶ In the present case 100% root coverage was achieved. Similar results were obtained in studies conducted by Miller and Halbrook.^{6,7} But only a partial coverage was reported by Biswas *et al* in Class III recession.

Dragdhan *et al* in a systematic review to compare clinical outcomes and width of keratinized tissue (KT) around teeth, following the soft tissue alternatives and free gingival graft (FGG) procedures concluded that free gingival grafts resulted in more stable results than alternatives.⁷ Aguido *et al* retrospectively evaluated changes in the amount of keratinized tissue (KT) and in the position of the gingival margin after free gingival graft procedures over a period of 10 to 25 years. They concluded that Gingival augmentation procedures performed in sites with an absence of attached gingiva associated with recessions provide an increased amount of KT associated with recession reduction over a long period of time.⁸

American Academy of Periodontology consensus report stated that in areas of inadequate attached gingiva and with good plaque control the amount of augmentation gained using free gingival grafts ranged from 3.1 – 5.6 mm.⁹ Recent evidence on root coverage indicates that significant reduction in recession can be achieved for Millers Class I and II recessions. But in this case report complete coverage was obtained in Class III recession. Again the success and long term predictability of the procedure also depends on various other factors like, the aetiology for recession, patient related factors etc.

The disadvantages of this technique include second surgical site, patient discomfort, post operative bleeding

from donor site, healing of donor site by secondary intention and unpredictable colour match.¹⁰

Free gingival grafts appear to be a predictable treatment option for root coverage of isolated recessions with lack of vestibular depth and inadequate amount of attached gingiva. With appropriate case selection, this technique is predictable in achieving complete root coverage.

CONFLICTS OF INTEREST

None

References

1. Goldstein M, Brayer L, Schwartz Z. A critical evaluation of methods for root coverage. *Crit Rev Oral Biol Med* 1996;7:87-98.
2. Lele P, Satyapal T, Mahagoankar P, Patil V, Mali R. Gingival recession coverage using free gingival autograft. A case report. *J Dent Med Sci* 2013;8:47-50.
3. Camargo PM, Melnick PR, Kenney EB. The use of free gingival grafts for aesthetic purposes. *Periodontol* 2000. 2001;27:72-96.
4. Ashok PV, Neetha B. Free gingival autograft – a case report. *Int J Dent Clin* 2010;2: 37-41.
5. Miller PD. Regenerative and reconstructive periodontal surgery. *Dental Clin North Am* 1988; 32: 287-306.
6. Halbrook T, Oschenbein C. Complete coverage of denuded root surfaces with one stage gingival graft. *Int J Periodontal Rest Dent* 1983; 3:8-27.
7. Dragan I, Hotlzman LP, Karimbux NY, Morin RA, Bassir SH. Clinical outcomes of comparing soft tissue alternatives to free gingival graft: A systematic review and meta-analysis. *J Evid Based Dent Prac* 2017;4:370-80.
8. Agudio G, Nieri M, Rotundo R, Cortellini P, Prato G. Free gingival grafts to increase keratinized tissue: A retrospective long-term evaluation (10 to 25 years) of outcomes. *J Periodontol* 2008;79:587-94.
9. Scheyer ET, Sanz M, Dibart S, Greenwell H, John V, Kim DM, Periodontal soft tissue non-root coverage procedures: a consensus report from the AAP Regeneration Workshop. *J Periodontol*. 2015;86:S73-6.
10. Saglam M, Köseoglu S. Treatment of localized gingival recessions with free gingival graft. *Eur J Gen Dent* 2012;1:10-4