University J Dent Scie 2019; Vol. 5, Issue 2

*University Journal of Dental Sciences*

# INCREASING THE WIDTH OF ATTACHED GINGIVA BY FREE MUCOSAL GRAFT – A CASE SERIES

Clinical Paper

[1]*Thamilselvan M,* [2]*Prasanta Bandyopadhyay,* [3]*Somen Bagchi,* [4]*Abinaya V*

[1]*Assistant Professor, Department of Periodontics, CSI College of Dental Sciences and Research, Madurai, Tamil Nadu, India.*

[2]*Professor and HOD, Department of Periodontics, Burdwan Dental College & Hospital, Bardhaman, West Bengal, India.*

[3]*Professor and HOD, Department of Periodontics, Dr. R. Ahmed Dental College and Hospital, Kolkata, West Bengal, India.*

[4]*Tutor, Department of Public Health Dentistry, Karpaga Vinayaga Institute of Dental Sciences, Madhuranthagam, Tamil Nadu, India*

**ABSTRACT :** An inadequate width of attached gingiva could result in a poor plaque control by the patient andfacilitate the progression of periodontitis resultingincreased loss of attachment. Several treatment options are available, among them, free mucosal graft is associated with predictable results. The aim of this report was to present a series of cases where free mucosal graft procedure was used to increase the width of the attached gingiva.

**Keywords:**
Free mucosal graft, FMG, attached gingiva, keratinized gingiva

**Conflict of interest:** Nil
**No conflicts of interest :** Nil

**INTRODUCTION :** Attached gingiva (AG) is that part of the gingiva that is firm, dense, stippled, and tightly bound to the underlying periosteum. An adequate width of AG is considered important for proper plaque control and prevents further attachment loss.[1]To increase the AG, gingival augmentation could be done either apical to the area of the recession or coronal to the area of the recession.[2] In the former method, no attempts were made to cover the exposed root. Instead, a free mucosal graft (FMG) or a free connective graft is used to increase the width of the AG apical to the recession preventing further loss of attachment. FMG is considered to one as the most predictable treatment option available. The present paper reports a series of three cases, where the FMG was used to increase the width of AG apical to the gingival recession.

**CASE REPORTS :** ***Case 1:***A 23-years male non-smoker patient visited thedepartment of periodontics, Dr. R Ahmed dental college, and hospital, Kolkata, with the chief complaint of hypersensitivity with thermal changes in the lower anterior teeth. Intra-oral examination revels the presence of Miller's class II gingival recession in relation toteeth #22and#24. The gingiva in relation to the above-mentioned teeth appeared soft and edematous with insufficient width of AG. FMG procedure was planned to increase the width of the AG.

***Case 2:*** A 37 years old male non-smoker patient reported to the same department with the chiefcomplaint of bleeding gum in relation tooth #22. Intra-oral examination revealed the presence of Miller's class II gingival recession in tooth #22. The gingiva in the above-mentioned tooth appeared inflamed with bleeding on probing. The width of the AG was insufficient in the above-mentioned tooth. FMG procedure was planned in this case also.

***Case 3:***A 29 years female non-smoker patient visited the department of periodontics with a chief complaint of bleeding gums. Intra-oral examination releases the presence of Miller's class II recession in relation to tooth # 24. The gingiva in

relation to tooth # 24 appears inflamed with insufficient width of AG. Same FMG procedure was planned in this case.

**SURGICAL PROCEDURE :** The patients were informed about the procedure and signed informed consents were obtained. The same surgical protocol was followed in all the three cases. A through phase I therapy was performed before surgery was planned (Figure 1A, 1B and 1C). The surgery was performed under local anesthesia.


Figure 1. Preoperative view of the three cases.

**RECIPIENT SITE PREPARATION :** Recipient site was prepared with an initial'semilunar'incision on existing mucogingival junction with 15 no. blade. Incisions were extended till one tooth either side of the surgical site and a full thickness flap was reflectedto expose the underlying bone (Figure 2A, 2B&2C).

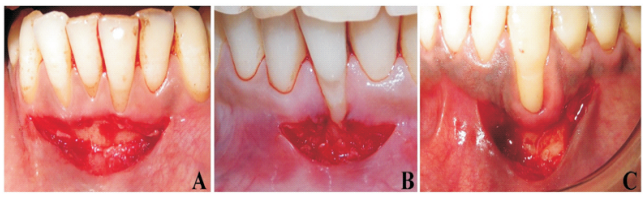


Figure 2. Recipient bed preparation:Semilunar incisions were placed in the recipient sites.

**Donor site preparation :** Bleeding points were marked on the donor site according to the size of the recipient bed (Figure 3A, 3B& 3C).

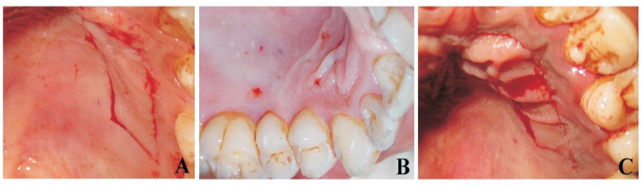


Figure 3. Palatal donor sites with bleeding points marked (B) and incisions placed(A&C).

The graft tissue of suitable thickness was harvested from the palatal donor site. Harvested graft contains epithelium and a thin layer of connective tissue (Figure 4A, 4B&4C). Thick grafts were trimmed to the ideal thickness (1-1.5 mm).

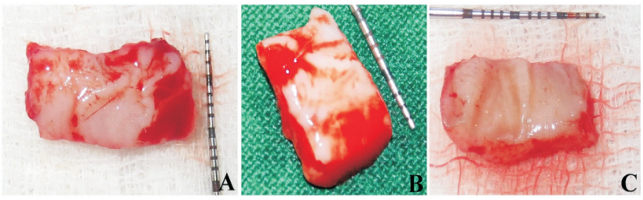


Figure 4. Harvested palatal grafts before trimming according to the size of the recipient sites.

Then the graft was immediately placed in recipient bed and adapted properly by applying finger pressure to eliminate dead space. The graft was stabilized with coronal, lateral and stabilizing sutureusing 4-0mer-silk suture (Figure 5A, 5B&5C).


Figure 5. Grafts were secured in the recipient sites after trimming according to the shape of the sites.

The surgical site was protected with the periodontal pack. Donor site was protected withHawley retainer.[2] Postoperative instructions weregiven, and routine drugs were prescribed. The suture was removed after 10 days. The patients were recalled after 3 months and 6 months for follow-up (Figure 6A,6B&6C).


Figure 6: 6 months postoperative view

**DISCUSSION :** The common feature in all the three cases is the absence of AG. In all the three cases, the width of the AG was increased by FMG which was first described by Bjorn in 1963.[3]In the present case series, the graft was placed directly over the bone tissue to avail the followingadvantages like reduced graft mobility, decreased swelling, and better hemostasis as reported by Donnenfled et al.[4]

The thickness of the harvested mucosal graft plays a vital role in the survival of the graft in the recipient site. Ideal thickness was 1 mm to 1.5 mm as reported by Penne et al.[5] Grafts which

were too thin might undergo necrosis[5] and graft which were too thick will also undergo necrosis due to the lack of nutrition to the central area of the graft. The aim of FMG procedure in the above cases was to increase the width of the AG not to cover the exposed root. The minimum width of AG for proper plaque control is still controversial, asa study by Lang and Loe concluded that a minimum of 2 mm of AG was needed,[6] but another study by Miyasato et al found no association between the amount of inflammation and the width of AG.[7]

**CONCLUSION:** The main aim of case series is to show the increase in the width of the AG in Miller's class II recession cases by FMG. Maintaining the width of attached gingiva is plays an important role in reducing the periodontal inflammation. It also improves plaque control measures by the patient,thus, reduce periodontal inflammation and improves the long-term prognosis of the involved tooth.

**ACKNOWLEDGMENT: None**

**REFERENCE:**

1. SaygunIsyl, KaracaySeniz, Ozdemire Atilla, et al. Multidisciplinary treatment approach for the localized gingival recession: a case report. Turk J Med Sci. 2005;35:57e63.
2. Takie HH, Scheyer T, Azzi RR, Allen EP, Han TJ. Periodontal plastic and esthetic surgery. In: Newman MG, Takel HH, Klokkevold PR, Carranza FA, editors. Carranza's Clinical Periodontology. 12th ed. St. Louis: Elsevier; 2015. pp 628-631.
3. Bjorn H. Free transplantation of gingival propia. SverigesTandalk T 1963;22:684
4. Donnenfled OW, Marks R, Glickman I. The apically repositioned flap: a clinical study. J Periodontol 1964;35(5):15-21.
5. Caffesse RG, Burgett FG, Nasjleti CE. Healing of free gingival grafts with and without periosteum. Part I. Histologic evaluation. J Periodontol 1979;50(11):586-594.
6. Lang, NP, Loe H. The relationship between the width of keratinized Gingiva and gingival health. J Periodontol.1972;43(10): 623-627.
7. Miyasato M, Crigger M, Egelberg J. Gingival condition in areas of minimal and appreciable width of keratinized gingival. J Clin Periodontol 1977;4(3):200-209.

**CORRESPONDING AUTHOR:**
**Dr. Thamilselvan M.**
Perioplanet,
29/4 C-1, Old Trunk Road,
Sattur - 626 203,
Virudhunagar, Tamil Nadu, India.
E-mail: thamil3011@gmail.com