



Case Report

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Gingival Augmentation with an Alternative Gingival Grafting Technique: A Case Report

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Abstract

The significance of keratinized gingiva around teeth and dental implants has long been challenged. However, certain clinical circumstances require gingival augmentation. In this case report patient having Miller's Class III gingival recession along with absence of attached gingiva in relation to malposed mandibular right central incisor was treated with free gingival graft procured from buccal gingiva. The aim was to augment keratinized tissue and attached gingiva in relation to mandibular central incisor along with esthetics. As free gingival graft procured from palate has its disadvantage of "tire-patch appearance" so graft was procured from buccal gingiva in relation to maxillary premolar area. This case was followed up till 6 months. The patient also underwent fixed orthodontic treatment, initiated 3 months after surgery. During orthodontic treatment periodontal parameters remained stable.

Keywords: Esthetics, Free gingival grafts, Gingival recession, Keratinized tissue.

INTRODUCTION

The attached gingiva has been considered an important factor to maintain periodontal health. It contributes to stabilize marginal gingiva against mastication forces and dissipate physiological forces applied by the muscular fibers of the alveolar mucosa on the gingiva. The amount of keratinized gingiva necessary for periodontal health remains controversial. Most clinicians reported about 1 mm of attached gingiva and 2 mm of keratinized gingiva is imperative to retain periodontal health [1-3]. However, in presence of effective plaque control, minimum width of attached gingiva is not required for the prevention of attachment loss [4].

The main objectives of gingival augmentation procedures include plaque control, improvement in patient comfort and prevention of future recession. An epithelialized autogenous masticatory free gingival graft procured from palate is preferred to increase keratinized gingiva [5]. However, it leads to "patch-like area" resulting in compromised esthetics. This case report describes the potential role of buccal gingiva as a donor tissue to augment gingiva.

CASE REPORT

A 21 years old, systemically healthy female patient reported with a chief complaint of difficulty in tooth brushing and receding gums since few weeks. Clinical examination revealed Miller's Class III gingival recession as well as absence of attached gingiva in relation to malposed mandibular right central incisor (# 41) [6] (Figure 1). Clinical parameters include recession depth, keratinized tissue width, width of attached gingiva and clinical attachment loss. UNC-15 periodontal probe was used to measure periodontal parameters. Recession depth of 1 mm was recorded in relation to #41. Clinical attachment loss was 3 mm at mid-buccal aspect in relation to #41. Tension test was positive in relation to #41. Thorough scaling and root planing was performed and oral hygiene instructions were given during phase I periodontal therapy. However, patient could not maintain acceptable oral hygiene in the mandibular anterior region. After obtaining written and informed consent, gingival augmentation procedure was performed using maxillary buccal gingiva as a donor site because patient had shallow palatal vault.

Under local anesthesia, recipient bed was prepared using horizontal incision with no. 15 scalpel apical to the available keratinized tissue (Figure 2). To avert graft mobility, muscle and loose connective tissue fibers were thoroughly scraped. At donor site, in relation to right maxillary second premolar area (#15), bleedin

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points were marked with pocket marker. Graft measuring 3 mm × 8 mm, of adequate thickness was taken apical to marking. (Figure 3) It was secured at recipient bed using silk suture and covered with Coe pack. (Figure 4) Patient was instructed not to brush at surgical sites and to

avoid pulling the lip for 2 weeks. Chlorhexidine rinse (0.12%) twice daily for 2 weeks was prescribed. Periodontal dressing and sutures were removed after 10 days. Patient was recalled at 2nd week and 4th week and then after every 3 months. Postoperative healing was uneventful.



Figure 1: Preoperative image showing gingival recession in relation to malposed mandibular right central incisor



Figure 2: Image showing recipient bed prepared



Figure 3: Image showing buccal gingiva graft procured from right maxillary premolar area



Figure 4: Image showing graft secured at recipient bed with silk suture



Figure 5: Postoperative image showing, graft blended well with surrounding tissue and gain in sufficient keratinized gingiva after 1 month of surgery



Figure 6: After 3 months of fixed orthodontic treatment (i.e. 6 months of surgery), clinical parameters remained stable

RESULT

At 1 month of surgery, graft was blended well with the adjacent tissue without any thick, patchy appearance. (Figure 5) Gingiva at donor site regained its normal form and contour. 1 mm of attached gingiva, 2 mm keratinized tissue width along with complete gingival recession coverage were achieved in relation to mandibular right central incisor. After 3 months of surgery, patient underwent fixed orthodontic treatment. Patient was followed-up even during fixed orthodontic treatment. At 3 months of initial orthodontic treatment (6 months after surgery), periodontal parameters remained stable. (Figure 6)

DISCUSSION

Various predisposing factors associated with development of gingival recession are thin periodontal phenotype, absence of attached gingiva and malaligned tooth in the arch [7-9]. In the current-era, patients often approach for gingival augmentation procedure due to esthetics concern [10]. The healing of free gingival graft procured from palate often results

in whitish and thick; tire-patch appearance [11]. However in this case, grafted tissue blended well with surrounding gingiva.

Patient in the present case did not report any postoperative discomfort at both recipient and donor sites. Conversely, patients often complain postoperative pain and discomfort following free gingival graft harvested from the palate. One possible reason behind discomfort could be slow healing of palatal wound [12]. Further, in this case patient underwent fixed orthodontic therapy 3 months after surgery and during orthodontic treatment, periodontal parameters remained stable. This finding was in accordance with another study by Mehta et al [13].

CONCLUSION

Based on the clinical outcomes observed in this case, it may be concluded that buccal gingiva may provide a useful alternative to augment keratinized gingiva.

Conflict of Interest

None declared.

Financial Support

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