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REVIEW ARTICLE

TREATMENT OF GINGIVAL RECESSION BY FREE GINGIVAL AUTOGRAFT: A CASES REPORT

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ABSTRACT

Gingival recession according to glossary of periodontics is defined as "Displacement of soft tissue margin apical to the cemento-enamel junction" (Glossary of Periodontal Terms). Gingival recession is a most common condition affecting the supporting structures of the teeth, in which the change in the position of the gingiva affects the esthetics and also leads to hypersensitivity due to the exposure of the cementum (SPK. 2012). Coverage of denuded roots has become one of the most challenging procedures in periodontal mucogingival surgery. Various surgical options have been developed to achieve the root coverage and include the use of free gingival autograft (FGG), subepithelial connective tissue graft, laterally sliding flap, coronally advanced flap, double papilla flap, guided tissue regeneration etc (Raju Anarthe *et al*., 2013; Shobhit Arora, 2015). FGG is considered to be the best treatment option when recession coverage with an increase in the apicocoronal dimension of the keratinized gingival tissues is the desired treatment outcome (SPK, 2012). Present paper presents a case of class I gingival recession (Miller's Classification) successfully treated with root coverage by free gingival autograft.

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INTRODUCTION

This past decade has seen the goals of periodontal surgery undergo refinement. The term "mucogingival surgery" was first introduced by Friedman in 1950 (Michael Sonick). The most common mucogingival problems are decreased amount of attached gingiva because of gingival recessions and lack of adequate vestibular depth in clinical practice.[9] Decreased amount of attached gingiva and vestibular depth may make it difficult for plaque control to be performed and predispose such an area to gingival inflammation. Various clinical studies have evaluated many surgical techniques for root coverage: rotational flaps, advanced flaps, free gingival grafts, connective tissue grafts, guided tissue regeneration and combination of these procedures (Raju Anarthe, 2013; Shobhit Arora, 2015). The free gingival graft was first described by Bjorn in 1963, and later by Sullivan and Atkins in 1968.

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The free gingival graft was initially used to increase the amount of attached gingiva and extend the vestibular depth.

Case Presentation

A 25 years old female patient reported to the department of Periodontics and Oral Implantology, Santosh Dental College and Hospital, Ghaziabad, Uttar Pradesh (India) with a chief complaint of sensitivity and root exposure in mandibular front region . Her general health condition was good, did not take any medications, had no known allergies and was a nonsmoker. She gave history of use of a hard toothbrush and horizontal strokes during brushing. Intraorally periodontal examination revealed gingival recession measuring 4 mm apico coronally and 2 mm mesio-distally with respect to tooth #41 and measuring 3 mm apico-coronally and 2 mm mesio-distally with respect to tooth #31 respectively when measured using a William probe (Fig 1.a&b). The patient's oral hygiene status was fair.

Fig. 1.a. Class I gingival recession w.r.t. #41

Fig. 1.b. Class I gingival recession w.r.t. #31

Fig. 2. Preparation of the receipient area

There was no other periodontal concern, other than Miller's class I recession w.r.t tooth #41 and #31. Presurgical therapy included patient motivation, education, plaque control instruction, scaling, root planning. After the patient's consent, it was decided to treat the site by free autogenous gingival grafting to achieve root coverage and simultaneously increase the width of attached gingiva.

Surgical Procedure

Preparation of Recipient Site

After local anesthesia (1:200000) and intraoral disinfection with 0.2 % chlorhexidine mouth rinse, a horizontal incision was made at the level of cemento-enamel junction extending from the line angle of adjacent teeth on either side of the recession deep into the papilla, creating a well defined butt joint. At the distal terminal of the horizontal incision, vertical incision was given extending well into the alveolar mucosa.
A partial thickness flap was elevated and excised apically. (Fig 2) Root biomodification with tetracycline hydrochloride for 3 minutes was done. (Fig 3)

Fig. 3. Root biomodification by tetracycline

Preparation of Donor Tissue

The amount of donor tissue needed was accurately determined by using a foil template. The left side of palate was selected to harvest the donor tissue between first and second premolar which had greater thickness. (Fig 4) The initial incision was outlined by the placement of tinfoil template with a number 15 scalpel blade. A bevel access incision was made to get an even thickness of the graft.

Fig. 4. Free gingival graft harvested from palate

The incision was made along the occlusal aspect of the palate with number 15 scalpel blade held parallel to the tissue, continued apically, lifting and separating the graft. The graft was placed on the recipient bed and sutured by means of interrupted sutures (4-0 silk nonresorable reverse cutting suture) at the coronal and apical borders. (Fig 5) The thickness of the graft was approximately 1.5 mm .The palatal wound was protected by a prefabricated Hawley's retainer.

Fig. 5. Free gingival graft placed and sutured

Operative Instructions

The patient was prescribed amoxicillin 500mg , 400mg of ibuprofen thrice daily for 5 days and instructed to rinse twice daily with 0.2% chlorhexidine rinse for 6 weeks postoperatively.

Surgical site was irrigated with normal saline and sutures were removed 10 days after surgery, home care instructions were given. The healing of palatal wound was satisfactory; patient did not complain of any discomfort. The patient was instructed to use an ultra soft tooth brush with a roll technique. The case was evaluated after every 15 days for follow up. Complete healing of free gingival autograft 6 months postoperative. (Fig. 6)

Fig 6. Post operative view after 6 months

DISCUSSION

The literature on FGGs reports very different results with percentages of root coverage ranging from 11% to 100%.[2,6] These differences may be attributed to differences in the severity of gingival recessions and in surgical techniques. In class I and II gingival recession, successful root coverage with FGG was obtained ranging from 90 to 100%. The presence of a wide band of keratinized gingiva was known to provide better plaque control, which leads to a possible significant improvement of the periodontal attachment apparatus (Raju Anarthe *et al*., 2013).

With creeping attachment, an increase in root coverage of approximately 1mm over a 1 year period post surgery usually occurs. However these are more technically demanding, time consuming, and the color match of the tissue is often less than ideal. Due to the predictability and versatility of connective tissue graft, the use of the free gingival graft for root coverage has drastically declined. But FGG is best suited in the following situations: increasing the depth of vestibule, increasing the amount of attached gingiva associated with a restoration, augmenting the area of minimal gingiva prior to orthodontic treatment. Proper case selection and careful tissue management is the key to the success of the application of these modifications of FGG (Priya Lele, 2013). More studies with a larger sample size would give more conclusive evidence so as to effectiveness and applicability of these techniques.

Conclusion

The free gingival graft for root coverage is still a feasible and effective treatment procedure in mucogingival surgery. Despite the fact that other effective root coverage techniques have been described, the free gingival graft may still be the best treatment option for gingival recession when an increase in the apicocoronal amount of the keratinized gingival tissues is a desirable treatment outcome such as cases with shallow vestibular depth and cases with inadequate gingival tissue where restorations with subgingival margins are to be placed.

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