



CASE SERIES

Mucogingival Aesthetic Surgery For An Isolated Denuded Root : A Complete Root Coverage Procedure

Sai Anusuya G¹, Jacob Raja S.A², Joann Pauline George³, Johnson Raja J⁴



ABSTRACT : Gingival augmentation coronal to the recession (root coverage) has become an important treatment modality because of increasing cosmetic and functional demands. In the selection of treatment procedures factors such as depth and width of gingival recession, availability of donor tissue, tooth position, root prominence, presence of muscle attachments and aesthetics has to be taken into consideration. A 25-year old male patient presented with Miller class II gingival recession in tooth no 33. His main concern was unpleasant elongated tooth appearance. Lateral pedicle graft root coverage procedure was selected and complete root coverage was obtained (favourable prognosis) with excellent prognostic scoring.

Key words : *gingival recession, mucogingival aesthetic surgery, root coverage, lateral pedicle graft.*

INTRODUCTION

Gingival recession is the apical migration of marginal gingiva, exposing the root surface to the oral environment¹. More than 50% of the population has one or more sites of gingival recession ≥ 1 mm, commonly involved being the buccal surface of the tooth². Understanding the different stages and conditions of gingival recession is necessary for predictable root coverage. The predictability of root coverage can be enhanced by the presurgical examination and the correction of the recession by using the classification proposed by Miller⁴. Also there are several other factors that may also account for this unpleasant and unaesthetic effect like plaque induced gingival inflammation, lack of attached gingiva, malpositioned tooth, shallow vestibule or local iatrogenic factors³.

The laterally (horizontally) displaced pedicle flap technique⁹, originally described by Grupe and Warren (1956), was the standard technique for many years and is still indicated in some cases. This technique can be used to cover isolated denuded root surfaces that have adequate donor tissue laterally. The vestibular depth should also be sufficient⁴.

The present case report describes a case of mucogingival aesthetic root coverage of an isolated gingival recession in mandibular canine by employing lateral pedicle graft technique.

CASE REPORT

A 25-year old healthy male patient presented to the Department of Periodontology, Krishnadevaraya College of Dental Sciences and Hospital, Bangalore, Karnataka, India with a chief complaint of unpleasant elongated tooth appearance of corner tooth in the lower jaw. Patient had a non-contributory medical history. Intraoral examination revealed a Miller's localized grade II gingival recession (Figure 1) in relation to the lower left mandibular canine (33) measuring 3mm in height and 2mm in width (Figure 2). There was an adequate attached gingiva (4mm) present in relation to 34. Adequate vestibular depth was also observed. Intra-operative periapical radiograph revealed no interdental bone loss in 33, 34 regions. Trauma from occlusion and tooth malposition in respect to the involved tooth was ruled out clinically.

Before root coverage was attempted the exposed portion of the root should be rendered free from bacterial plaque. Through scaling and root planning (Figure 3) was done and the patient was periodically recalled to assess his oral hygiene before planning periodontal surgical procedure. The positive compliance from the patient was assessed and informed consent was taken before performing surgical root coverage procedure.

Root prominence with respect to 33 was reduced (Figure 4). Root conditioning using tetracycline

removes an amorphous surface layer and exposes the dentin tubules. Here the denuded root surface with respect to 33 (Figure 5) was rubbed with tetracycline HCl (100mg/ml for 3-5 min).

The surgical site 33, 34 regions were anaesthetized with local anaesthesia (2% lignocaine with 1:80,000 adrenaline). With a 15no.surgical blade, an internal bevel incision was given around denuded root of 33, to remove the adjacent epithelium and connective tissue (Figure 6). An external bevel incision was given starting from the mesial surface of 33 to expose the connective tissue surrounding the denuded root surface of 33.

Donor site was prepared by extending sulcular incisions (Figure 7) from the distal surface of 33 to the mesial surface of 35. Two vertical incisions were made, one at distal line angle of 33 and other at mesial line angle of 35. Vertical incisions were made continuous with horizontal incisions, and were extended apically to the mucosal tissue to permit adequate flap mobility (Figure 8,9). The flap was raised using a sharp dissection. A cutback releasing incision (Figure 10) was made to ensure that the flap is free of tension and free enough to permit movement to the recipient site. The pedicle flap was positioned 1mm coronal to cement-enamel junction of tooth 33 and immobilized with interrupted sutures using 3-0 Ethicon sutures (Figure 11, 12).

The donor site was covered with aluminium foil and a soft periodontal dressing (Figure 13, 14). The patient was instructed regarding post-operative care of the surgical site. Analgesics and antibiotics were prescribed for days. Patient was instructed not to brush on the surgical

area and use chlorhexidine gluconate 0.2% twice daily for 2 to 3 weeks. Sutures were removed after 10 days of surgery. Following removal of the dressing and the sutures, the patient is instructed to avoid mechanical tooth cleaning for further 2 weeks, but to use twice daily rinsing with a chlorhexidine solution as a means of infection control.

Examination of surgical site showed complete coverage of root surface of 33 (figure 15, 16) with excellent colour matching. Patient was completely satisfied with the treatment outcome. Oral hygiene instructions were reinforced, and the patient was instructed to come for regular dental check-up.

CLINICAL OUTCOME OF ROOT COVERAGE PROCEDURES⁵

Independent of the modality of surgical procedure used to obtain soft tissue root coverage, shallow residual probing depth, gain in clinical attachment, and an increase in gingival height are the common characteristics of treatment outcome. Although the major indication for performing root coverage procedures is aesthetic/ cosmetic demands by the patient, few studies have included assessment of aesthetics as end-point of success.

A systematic review by Pagliaro et al (2003) gave a summary with regard to the average amount of initial Miller class I-II recession defects that was successfully covered following treatment; shows that an average of 63 – 86% root coverage may be expected. Complete coverage of the recession defect is the ultimate goal of the therapy.



Fig.1: Pre Operative



Fig. 2a: Height and width of gingival recession determined



Fig. 2a: Height and width of gingival recession determined



Fig.5 Root Conditioning Done



Fig.3 Scaling & Root Planing Done



Fig.6: Elimination of the pocket in 33 region



Fig.4 Root prominence reduced

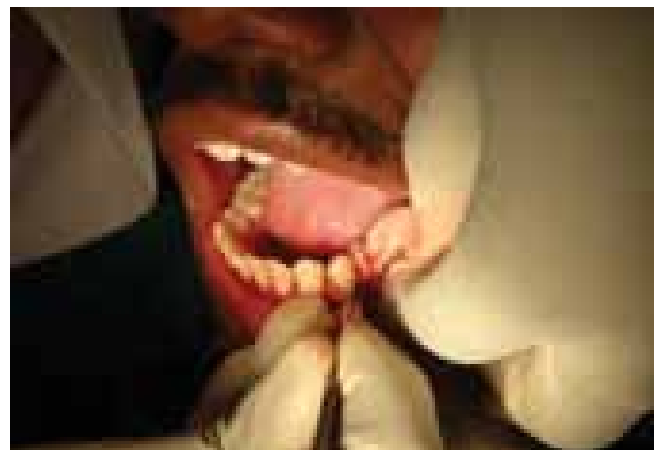


Fig.7: Sulcular incision given

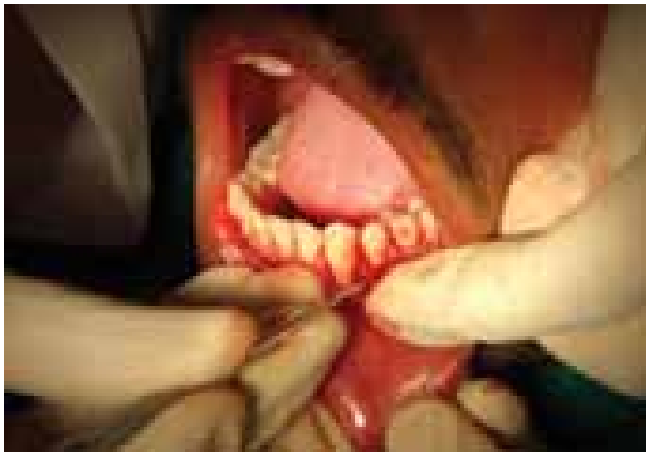


Fig.8: Donor tissue – 34 region



Fig.11: Graft positioned on recipient site



Fig.9: Reflection of the flap



Fig.12: Flap sutured on the recipient site



Fig.10: Relieving incision



Fig.13: Tin foil adapted over donor site



Fig.14: Periodontal dressing given



Fig.15: Post-Operative(3 Months)



Fig.16: Post-Operative (6 Months)

REFERENCES

1. Langer B, Langer L. Subepithelial connective tissue graft technique for root coverage. *J Periodontol* 1985;56:715-20
2. Kassab MM, Cohen RE. The etiology and prevalence of gingival recession. *J Am Dent Assoc* 2003;134:220-5.
3. Martins TM, Bosco AF, Gazoni GG, Garcia SF. Laterally positioned flap associated with subepithelial connective tissue graft for coverage of isolated gingival recession. *RSBO* 2011;8:464-8.
4. Newman, Takei, Klokkevold, Carranza. *Carranza's Clinical Periodontology A South Asia Edition* 2011; 11th edition: volume I, II.
5. Niklaus P. Lang, Jan Lindhe. *A clinical periodontology and implant dentistry* 2008;5th edition.
6. Pabolu C, Nagubandi KK, Ramisetty A, Mutthinenei RB. Esthetic root coverage with lateral pedicle flap - A case report. *J Res Adv Dent* 2013;2:11-5.
7. Greenwell H, Bissada NF, Henderson RD, Dodge JR. The deceptive nature of root coverage results. *J Periodontol* 2000;71:1327-37.
8. Staff leno H. Management of gingival recessions and root exposure problems associated with periodontal disease. *Dent Clin North Am* 1964;3:111-20.
9. Grupe HE, Warren R. Repair of gingival defects by sliding flapoperation. *J Periodontol* 1956;27:92-5.
10. Claffey N, Bogle G, Bjorvatn K, Selvig KA, Egelberg J. Topical application of tetracycline in regenerative periodontal surgery in beagles. *Acta Odontol Scand* 1987;45:141-6.
11. Heinz Erpenstein, Raphael Borchard. Criteria for the selection of root coverage procedures. Part 1: intention, indication, methods. *Perio* 2006;vol 3,issue 2:139 -152.
12. Guinard, Caffesse. Treatment of localized gingival recessions part III. Comparison of results obtained with lateral sliding and coronally repositioned flaps. *J of periodontology* 1978;vol 49:457-461.

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