A trio incision strategy in the management of miller’s class IV progressive type of defect
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Abstract
Anticipation of root coverage procedures has been exigent, due to the multi-factorial etiology of recession defects, its classification, technique used and the amount of bone present to support the soft tissue. The aim of this case report is to propose a new, predictable root coverage strategy that involves a trio-incision design. The paper report the management progressive class IV recession defect associated with shallow vestibule in the presence of advancing periodontal bone loss, with Trio- Incision Strategy i.e., firstly vestibular releasing incision, secondly periosteal releasing incision and thirdly sulcular incision.

Key Words: Miller Class IV; Gingival Recession; Trio-Incision.

Introduction
Gingival recession (GR) is defined as the oral exposure of the root surface due to displacement of the gingival margin apical to the cemento-enamel junction.(1) Hall, in the World Workshop in Clinical Periodontology stated that ‘‘Root coverage techniques never have achieved general acceptance and fail on a predictable basis; nevertheless, the goal of such a procedure elusive as it has been, remains the dream of periodontists’’. (2) The paper report the management of a Class IV defect with Trio- Incision Strategy.

Case Report
A 42 year-old woman presented with a chief complaint of unaesthetic appearance along with sensitivity in relation to lower anterior teeth. Her medical and dental history was unremarkable. After clinical and radiographic evaluation she had Miller’s Class III & IV type of gingival recession with respect to tooth 31 and 41 respectively (Figure 1a). Pertinent findings from the periodontal examination revealed that clinical attachment loss of >5mm was there along with interproximal bone loss which was moderate with respect to tooth 31 and 41. In addition, the amount of keratinized attached gingiva was inadequate with shallow vestibule. Tension test was positive. After proper isolation of the surgical field, the operative site was anaesthetized. Following thorough scaling and root planning (Fig 1b) vestibular releasing incision was given on labial mucosa apical to 31, 41 and periosteum was sutured to it. Careful undermining of flap was performed and sulcular incision was given (Fig 1c) PRF membrane was placed under the flap (Fig 1d and 1e). Full alveo-gingival unit was then coronally advanced and was stabilized by suspensory sling sutures (Fig 1f). SECT graft along with periosteum was harvested and then placed on exposed bone to widen the zone of attached gingiva and was sutured in place with chromic cat gut sutures (Fig 1g and 1h). Healing was uneventful (Fig 1i). The donor site appeared normal in color and healthy after four weeks and the recipient site was healthy with excellent color match with adjacent tissues. The tension test was negative. These results were stable and maintained at the end of five months (Fig 1j).

Fig1a:Pre-treatment view #31 & #41 site, Fig 1b. Post-treatment view of surgery site after scaling and root planning with 6 mm of recession, Fig 1c. Vestibular releasing incision on Labial mucosa to minimize tension, Fig 1d. PRF membrane over Fig 1e. Inserting PRF membrane, Fig 1f. Stabilization of coronally displaced the exposed periosteum beneath the undermined flap by suspensory sling sutures, Fig 1g. SECT graft harvested from palate, Fig 1h. SECT graft in recipient bed, Fig 1i. 10 days post-op view, Fig 1j. 6 months post-op view of treated site of treated site.
Discussion

GR has always been a substantial issue for periodontist because anticipation of root coverage procedures has been exigent, due to the multifactorial etiology of recession defects, its classification, the technique used and the amount of bone present to support the soft tissue. The challenge is not to only address these biological and functional problems present in the periodontium, but also to provide the therapy that is aesthetically pleasing.(3)

During recent decades, different surgical procedures for root coverage based on tissue displacement, whether by translation (ie, pedicle flap procedure) or by grafting (ie, free gingival or connective tissue graft [CTG]) procedures have been proposed. Modifications of these techniques have been developed, proposed, and combined with membranes or tissue-engineered material. Although tissue grafting for root coverage is not a new concept, periodontal plastic surgery and aesthetic soft-tissue grafting for root coverage have not always been a mainstay of periodontics.(4)

Despite of high success rate in achieving root coverage, the coronally advanced flap (CAF) requires peristeal and vertical releasing incisions for tension-free flap mobilization. However, this may result in shallowing of the vestibule and, depending on the gingival phenotype, scarring of the vertical incisions that could detract from the esthetics.(5) To overcome the disadvantages of CAF Tarnow described the semilunar coronally-positioned flap technique. It is a modification of a CAF technique for incisally repositioning the gingival tissues to address recession defects with no tension on the flap after repositioning, no shortening of the vestibule, no reflection of the papillae (thereby avoiding esthetic compromise), and no suturing.

In an attempt to obtain higher success rate of root coverage in such kind of cases in aesthetic zone, combination of different procedures have been used. A recent innovation in dentistry is the use of Platelet-Rich Fibrin (PRF), a concentrated suspension of the Concentrated Growth Factors (CGF), along with the root coverage procedures in recession defects to enhance wound healing and tissue regeneration.

Careful planning and choosing an appropriate surgical procedure for the specific clinical presentation is essential to achieving a high degree of predictability with root coverage procedures.(6) The selection surgical technique depends on the local anatomic characteristics of the site to be treated and on the patient’s demands. The patient influences the selection of the surgical technique especially when concerned about an esthetic problem due to the exposure of root surfaces during smiling or function.

In the cases where the recession defect is due to shallow vestibule having inadequate width of keratinized gingiva, with marginal insertion of frenulum loss and presence of advanced bone loss, none of the above procedures might give foreseeable results because neither quantity nor quality of gingiva is adequate.

Conclusion

This paper concludes that complete surgical protocol described in this case report, a trio-incision design; that is firstly vestibular releasing incision, secondly crevicular incision and thirdly periosteal releasing incision, gives a successful surgical outcome and esthetic result.

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