



CORONALLY ADVANCED FLAP FOR TREATMENT OF GINGIVAL RECESSION: A CASE REPORT

Periodontology

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ABSTRACT

Gingival recession is the most common mucogingival defect, characterized by apical migration of the gingival margin from the cemento-enamel junction and hence there is root exposure. This may lead to a lot of problems such as tooth sensitivity, mobility, risk of caries below gumline and also aesthetically displeasing. Root coverage may be achieved by a number of surgical techniques. Here we present a case of the coronally advanced flap technique for root coverage with Millers class I type of recession. This technique offers the advantage of a single surgical site, less patient discomfort and predictable root coverage with good colour match.

KEYWORDS

gingival recession, root coverage, coronally advanced flap

INTRODUCTION

Gingival recession can be caused by periodontal disease, inflammation, improper brushing, incorrect occlusal relationships and dominant roots.¹ These can appear as localized and generalized gingival recession. Recession can occur with or without loss of attached tissue. It can render patients aesthetically conscious, cause tooth sensitivity, cervical abrasion, and increased susceptibility to root caries and which ultimately leads to poor oral hygiene.

Mucogingival recession deformities can be corrected with a variety of periodontal plastic surgical procedures each demonstrating a variable degree of success. Mucogingival surgery as defined by Friedman refers to surgical procedure done to correct relationships between gingival and oral mucosa. Periodontal plastic surgery is defined by 1996 world workshop in clinical periodontics as surgical procedures performed to correct or eliminate anatomic, developmental or traumatic deformities.²

Various root coverage procedures³

The different root coverage procedures are

1. Free gingival autograft, free C/T autograft,
2. Pedicle autograft such as laterally positioned flap and
3. Coronally positioned flap-semilunar pedicle (tarnow)
4. Subepithelial C/T (langer)
5. Guided tissue regeneration,
6. Pouch and tunnel technique.

For Miller's Class I and II gingival recessions the coronally advanced flap has been shown to be predictable since 1926 as described by Norberg.⁴ Evidence shows that a coronally advanced flap alone in many cases results in complete root coverage and is stable over time.⁵ A coronally advanced flap is less invasive for the patient and requires less chair-time. It has been hypothesized that a coronally advanced flap approach could be successfully applied when the residual gingiva is thick⁶ and wide.⁷ It can be used in treating single or multiple recession defects.

CASE REPORT

A 33-year-old male patient, he had chief complaint of unsatisfactory esthetics because of receding gums in his maxillary front teeth. Clinical examination revealed good systemic health, with no history of drugs or smoking. Radiological examination revealed no interproximal bone loss, while clinical intraoral examination showed good gingival health. The maxillary left canine showed gingival recession 5 mm height and 5 mm wide with a thick gingival biotype (Figure 1A, B, C). It is a Millers class I recession. We concluded that traumatic brushing was the possible cause of recession and accordingly provided instructions regarding oral hygiene, brushing technique, use of a soft brush, and regular change of the brush. Proper scaling and root planing was performed and patient was recalled after 1 week for surgical procedure.



Fig 1A: pre-op view

B: measurement of recession 5 mm height

C: measurement of recession 5 mm width

SURGICAL PROCEDURE :

The area was anaesthetized locally with 2% lignocaine hydrochloride containing adrenaline at a concentration of 1:80,000. (Fig 2A). Marking of the surgical site was done. (Fig 2B) An intra-sulcular incision was made by using Bard parker number 15 blade (B.P. Blade) at the buccal aspect of the involved tooth. Two horizontal incisions (Fig 2 C,D) were made at right angles to the adjacent interdental papillae, at the level of the CEJ, without interfering with the gingival margin of the neighbouring teeth. Two oblique vertical incisions were extended beyond the mucogingival junction to relieve muscle tension and a trapezoidal split- full- split thickness flap was raised and extended apically beyond the mucogingival junction (Fig 2 E) releasing the tension and favouring the coronal positioning of the flap (Fig 2 F). The epithelium on the adjacent papillae was de-epithelized. The root surface was instrumented with curettes and irrigated with sterile saline solution. The tissue flap was coronally advanced adjusted for optimal fit to the prepared recipient bed, and secured at the level of the CEJ by suturing the flap to the connective tissue bed in the papilla (Fig 2G). Periodontal dressing (Coe – Pak™) was placed over the surgical site (Fig 2H). Patient was recalled for removal of sutures after 14 days.



Fig 2A: Local anesthesia application

Fig 2B: Marking of surgical area

Fig 2C: Incision using BP blade 15

Fig 2D: Incision line

Fig 2E : Full thickness flap

Fig 2F: Coronally advanced and adjusted

Fig 2G: Suturing done

Fig 2H: Periodontal dressing (Coe – Pak™)

POST- OPERATIVE INSTRUCTIONS-

For the first post-operative day, the patient was advised to take soft diet, avoid hot food or beverages, avoid any mechanical trauma to the site such as toothbrushing, avoid drinking from a straw, not to touch the

area or rinse vigorously. The patient was explained on why the periodontal dressing was placed and to avoid removing it for a week. He was asked to visit the hospital in case of any emergency or discomfort or if the pack was dislodged. He was advised to rinse with 10 ml of 0.2 % chlorhexidine mouthwash twice daily for 2 weeks. Capsule Amoxicillin 500 mg TDS for 5 days and tablet Ibuprofen 400 mg TDS for 3 days was prescribed. Patient was recalled after one week for removal of periodontal pack and sutures. He was recalled every month postsurgery for review and scaling.

RESULT

Complete root coverage was obtained and the results were maintained upto 3 months. The patient reported to be completely satisfied with the aesthetical outcome. After the procedure, the periodontal tissues presented normal colour, texture and contouring (Fig 3A,B,C)



Fig 3A: Root coverage after 3 months

Fig 3B,C: measurement post op (no recession seen)

DISCUSSION

The initial height of the recession is an important factor that should be taken into consideration because of its influence on the results. The higher it is, the lower the complete root coverage frequency

The coronally positioned flap was classified as a pedicle soft tissue graft because of vertical movement in the coronal direction. This flap provides a great combination of color, texture, contour, technical simplicity, little pain and postoperative discomfort (because scarring is by first intention), and good vascularization of tissue moved through the pedicle.⁸ This surgery requires only a single surgical site, and it is recommended for the treatment of areas with Miller Class I recession, where there is sufficient keratinized mucosa apically from the gingival margin and adequate tissue thickness⁹ as it was observed in this case. However, it is not indicated for patients with a shallow vestibule, or thin gingival tissue.¹⁰ It is necessary to emphasize the importance of adequate surgical planning, considering multiple factors such as the type of recession, quantity and quality of keratinized tissue, tooth position in the arch, flap type, and degree of bone loss among other factors, in order to gain a favourable clinical outcome.

CONCLUSION:

The conditions necessary for the success of root coverage procedures are appropriate case selection with no loss of interdental papilla and interdental alveolar bone adjacent to gingival recession and sufficient interdental papilla adjacent to gingival recession area, sufficient blood supply ensured to donor tissue, root surface covered with thick donor tissue (flap and graft), donor tissue adapted closely to the recipient site, and sutured. The dead space between the donor tissue and recipient site will interfere with circulation and no severe decay or abrasion on the exposed root. This technique allowed for better control over flap repositioning and also reduces apical tissue retraction while attempting for root coverage

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