

# TREATMENT OF GINGIVAL RECESSION WITH CORONALLY ADVANCED FLAP PROCEDURE: A CASE REPORT

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## ABSTRACT

The treatment of buccal gingival recession is a common requirement due to aesthetic concern or root sensitivity in patients with high standards of oral hygiene. This paper reports the treatment of gingival recession associated with sensitivity. The procedure involved utilization of coronally advanced flap. At the postoperative follow-up visits, the success of the surgical approach was confirmed by the absence of tooth sensitivity and presence of gingival tissue with normal color, texture and contour. After 3 months of follow-up, the clinical conditions were stable with satisfactory root coverage and periodontal health. An excellent aesthetical outcome was achieved and the patient was satisfied with the outcome.

**Key Words:** recession, sensitivity .

## INTRODUCTION

Gingival recession is defined as the displacement of the soft tissue margin apical to the cemento–enamel junction and is a frequent clinical feature in populations with both good and poor standards of oral hygiene<sup>1</sup>. Gingival recession can render patients aesthetically conscious. Besides, it can cause tooth sensitivity, cervical abrasion, and increased susceptibility to root caries and leads to poor oral hygiene. This necessitates alleviation of gingival recession in a predictable manner<sup>2,3</sup>. Clinicians are challenged to achieve outcomes that meet these exacting standards, and therefore need a sound, clinically oriented and scientifically supported decision-making process to plan the therapeutic approach, to predict the outcome and, finally, to achieve it. The functional aspects of root coverage may be controversial, but the cosmetic aspect and

satisfaction is not debatable. Evidence shows that a coronally advanced flap<sup>5</sup> alone in many instances results in complete root coverage and is stable over time. A coronally advanced flap is less invasive for the patient, requires less chair-time and probably less surgical skill. It would therefore be desirable to use a coronally advanced flap approach when indicated. It has been hypothesized that a coronally advanced flap approach alone could be successfully applied when the residual gingiva is thick<sup>1,6</sup> and wide<sup>2</sup>, although existing evidence does not support this hypothesis in full. It can be used in treating single or multiple recession defects.

## CLINICAL REPORT

A 35-year-old male was referred to department of periodontics, Modern Dental College & Research Centre Indore, complaining of the unaesthetic appearance and hypersensitivity of his maxillary front teeth.

During the clinical examination, it was noted that there were multiple Miller's class II<sup>8</sup> gingival recessions in teeth

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numbers 11,13 and 21. Gingival recessions were associated with hypersensitivity (Fig 1). The teeth presented shallow probing depth (1-2mm) with bleeding on probing. The patient was first submitted to initial preparation comprising scaling, root planing and oral hygiene instructions. After 10 days, he was scheduled for root coverage procedure with coronally advanced flap. This was the technique chosen as he demonstrated more than 3 mm of attached gingiva and thick gingival biotype. After antisepsis and anesthesia, an intrasulcular incision was made with a surgical blade on the buccal aspect of the involved teeth. Two oblique vertical releasing incisions were made lateral to the recession defects starting at a point apical to the interdental papillae extending into the alveolar mucosa (Fig. 2). The distance between the coronal extension of the vertical incision and the crest of the interdental papillae was approximately equal to the anticipated coronal displacement of the flap, to minimize tissue overlapping in the interdental area. A trapezoidal mucoperiosteal flap was raised 1 to 2 mm apical to the crest of the bone. Then a partial thickness dissection was carried out apically from this level leaving the underlying periosteum in place. The papillae were de-epithelialized and the flap then displaced at least 1 mm coronal to the cemento-enamel junction (Fig. 3). Suturing of oblique releasing incision was performed with 4-0 silk sutures as described by Allen and Miller<sup>9</sup> in an apico-coronal direction (Fig.4) before suturing the papillae. This allowed for positioning of the gingiva without tension. Additional interrupted sutures were placed to close the oblique releasing incisions in the alveolar mucosa. The coronal, mesial and distal extremities ties of the flap were secured with two single sutures placed in the interdental areas (Fig.4). Tin foil and periodontal dressing were placed over the sites. The pack and sutures were removed after 10 days. Three weeks after surgery, patient was instructed to resume

mechanical tooth cleaning using a soft toothbrush and a careful roll technique. Patient was called for follow up weekly for four weeks, once a month for 3 months. Complete root coverage was obtained and the results were maintained. The patient reported to be completely satisfied with the aesthetical outcome. His tooth sensitivity was also totally abolished. At 3month (Fig 5) after the procedure, the periodontal tissues presented normal color, texture and contouring.



Fig 1: Pre-op



Fig 2: Incisions



Fig 3: Flap Reflection



Fig 4: Suturing



Fig 5: 3 months postop

## DISCUSSION

The amount and thickness of keratinized tissue is generally thought to influence the outcome of root coverage: thick tissues and large amounts of residual keratinized tissue are 'perceived' as favorable. Many clinicians select a coronally advanced flap or a sliding flap when the residual keratinized tissue is well represented, or place a graft under the flap when keratinized tissue is insufficient in thickness and width. However, there is limited evidence to support this approach. A clinical study<sup>6</sup> tested the influence of flap thickness following coronally advanced flap procedures. The results indicate that flap thickness is significantly ( $P < 0.0001$ ) associated with root

coverage. A flap thickness of >0.8 mm was associated with complete root coverage, while a flap thickness of <0.8 mm was associated with partial root coverage. Therefore, 0.8 mm can be considered as the critical flap thickness above which the expected clinical outcome should be complete root coverage when using a coronally advanced flap alone. Another study<sup>8</sup> evaluated the relationship between root coverage and baseline amount of keratinized tissue in laterally positioned and coronally advanced flaps. Multiple logistic regression analysis showed a statistically significant relationship between complete root coverage and the amount of keratinized tissue lateral to the gingival defects: the greater the amount of keratinized tissue, the greater the percentage of root coverage. Many studies and recent systematic reviews showed the importance of baseline recession depth in the treatment outcome. Unfortunately, the key information – to be able to forecast when coronally advanced flap will be successful – is still missing. Many ‘experts’ support the hypothesis that therapy with coronally advanced flap alone can be successfully applied when the residual gingiva is thick and wide. Accordingly, the adjunctive use of a graft could be restricted to sites with thin and narrow residual gingiva. A potential alternative is the use of enamel matrix derivative.

## CONCLUSION

This case report indicates that teeth with gingival recession can be successfully treated by the coronally advanced flap. When used in indicated cases, this root coverage technique is less invasive for the patient, requires less chair-time and less surgical skill.

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