



## Exploring Surgical Treatment Modality In Miller's Class III Gingival Recession Of Mandibular Anterior Teeth

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**ABSTRACT:** *Gingival recessions present complex soft tissue pathology, with a multiple etiology and a high prevalence which increases with age. They are defined as an exposure of the root surface of the teeth as a result of the apical migration of the gingival margin beyond the cementum-enamel junction, causing functional and aesthetic disturbances to the affected individuals. A 29 years old patient reported to this institution with a chief complaint of long teeth which were aesthetically compromised and difficulty in cleaning. Frenectomy was performed first. After 15 days, lateral pedicle technique along with alloplastic bone graft placement was done to cover the exposed root of the mandibular anterior teeth. .*

**KEY WORDS:** *Gingival recession, frenectomy, lateral pedicle flap, alloplastic bone graft.*

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### I. INTRODUCTION

Gingival recession not only presents one of the most common aesthetic and functional problems of the periodontium, but also is one of the most complexes regarding the aetiology and the treatment modalities.[1] and [2] They are defined as an exposure of the root surface of the teeth as a result of the apical migration of the gingival margin beyond the cementum-enamel junction.[3] It is very common: 50% of subjects in the populations studied have at least one or more sites of 1 mm of root exposure or more;[4], [5] and [6] it affects patients with both good and poor oral hygiene [7] but with a higher prevalence in males [8] and in older ages [7]. It may be localized or generalized and it can affect one or more tooth surfaces, with the buccal ones being most frequently affected.

Besides aesthetic shortcomings [7] and [8], gingival recessions have a high predisposition to be associated with functional problems related to root exposure, such as dentinal hypersensitivity [9], [10] and [11] plaque retention, gingival inflammation, root caries [12] and [13], alveolar bone loss and eventually tooth loss [14] and [15] Considering the high prevalence of this condition, the aesthetic and functional problems related to it and the challenges its treatment presents, a thorough understanding of the disease and its treatment modalities is of crucial importance, to manage it successfully and with predictable long-term outcomes. Grupe and Warren were the first to describe the sliding flap as a method to repair isolated gingival defects in 1956. [6] and [16] They reported elevating a full-thickness flap one tooth away from the defect and rotating it to cover the recession. In 1967, Hattler reported the use of a sliding partial thickness flap to correct mucogingival defects on two or three adjacent teeth. In 1968, Cohen and Ross described the double papilla repositioned flap using the interproximal papillae to cover recessions and correct gingival defects in areas of insufficient gingiva not suitable for a lateral sliding flap.[16]

### II. LATERAL PEDICLE FLAP TECHNIQUE

The laterally positioned flap is commonly used to cover isolated, denuded roots that have adequate donor tissue laterally and vestibular depth.[17] Various modifications in laterally sliding flap have been proposed in order to avoid the reported undesirable results on the donor site. Laterally positioned pedicle flap-revised technique have been introduced by Ruben, Goldman and Jonson as a modification of lateral sliding flap technique first described by Harvey (1970). [10] and [18] This flap is elevated from donor zone as full thickness in the mesial portion of the flap (near the recession) and a split thickness on the distal portion (away from the recession). The objective of full thickness (mucoperiosteal) flap design in the mesial portion of flap is to place periosteum over the exposed root to utilize its potentially dynamic reparative potential to provide more

tenacious connective tissue-cementum fixation of the flap.[11] The distal portion of the flap i.e., away from the recession reflected as split thickness flap which limits the post-operative complication of bone resorption by preserving the periosteal protection and blood supply to the septum. Few factors have to be considered when opting for this technique.

1. The interdental papilla should be thick next to recession
2. There should be an absolutely healthy periodontium adjacent to the recession to be treated
3. This technique cannot be practiced to treat multiple adjacent recessions.

### III. CASE REPORT

A 29 years of male patient reported to the Department of Periodontics in Kothiwal Dental College & Research Centre with a chief complaint of long teeth which were aesthetically compromised and difficult to clean On brushing he felt pain in the region along with bleeding.

On clinical examination, Miller's Class III recession was diagnosed irt #31,41 along with papillary abberant frenum irt #31-41 region.(Figure 1)

CBCT and OPG were recommended to see the amount of bone level present irt #31-41 region.

Pre operative CBCT revealed height from CEJ of #31 and #41 to be 4.9mm and width at crestal level to be 2.2mm(Figure 2)

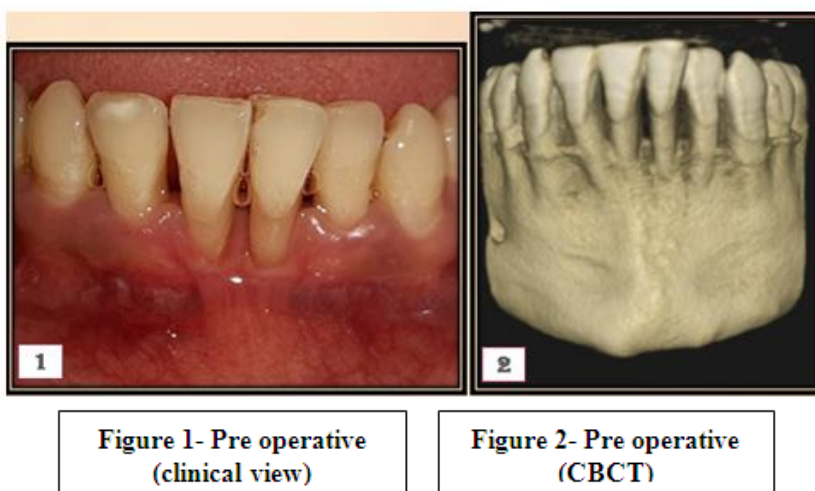


Figure 1- Pre operative (clinical view)

Figure 2- Pre operative (CBCT)

### IV. TREATMENT PROCEDURE

After thorough scaling and root planing, frenectomy of the wide labial frenum was planned first to reduce the stress in the area [Figure 3 (A) and (B)]. The patient was advised antibiotics (Amoxicillin 500 mg + Clavulanic acid 125 mg) thrice a day, along with analgesics (Aceclofenac 100 mg + Paracetamol 325 mg) twice a day for 5 days.

On the 15<sup>th</sup> day, the area (#33- #43 region) was anaesthetized with 2% lignocaine of 1:100,000 adrenaline and crevicular incisions were given from the distal aspect of #33 to the distal aspect of #43.

The flap was then reflected with the help of a periosteal elevator and thorough root planing was done [Figure 4(A)]. The flap from the mesial aspect of #33 and #43 was cut into two halves separating the mesial aspects of papilla of the canines from the distal aspects [Figure 4 (B) and (C)].

Then both the flap were sutured together to form one single envelope flap to cover the exposed root of #31 and #41 [Figure 4 (D)]. Alloplastic bone graft was placed in the area and then the flap was sutured back. Periodontal dressing was placed over the area.

The patient was called after 3 days for the dressing over the area. The patient was recalled for follow up on 10<sup>th</sup> day and then after every 3 months till 2 years [Figure 5 (A) (B) and (C)].

Post operative CBCT showed the measured height from CEJ to be 4.1mm and width at the crestal level to be 6.5mm (Figure 6).



Figure 3 (A) and (B)- Pre operative and post operative (Frenectomy)

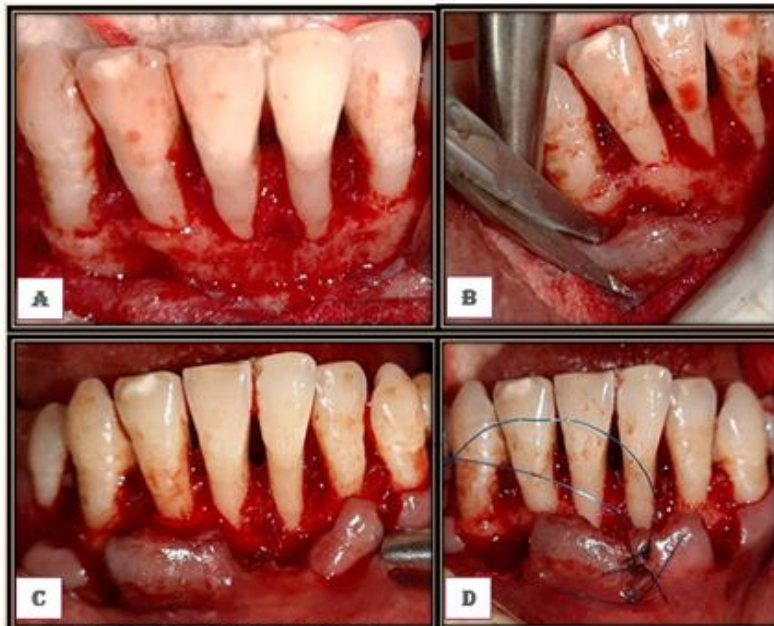
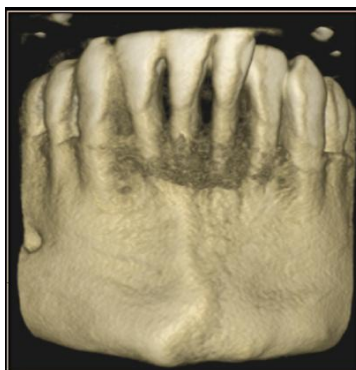


Figure 4: (A) Reflected flap (B) Flap splitted from mesial aspects (C) Flap after splitted into two halves (D) Flap were tied together as an envelope flap



Figure 5: (A) Post operative 1 month (B) Post operative 6 months (C) Post operative 2 years



**Figure 6- Post operative (CBCT showing allonlastic bone graft placed)**

## V. DISCUSSION

This case report presented wide lateral pedicle graft surgical technique for treatment of Miller's Class III recession (denuded root surface) teeth. The main aim of the surgical procedure was to increase the width of the attached gingiva so that the patient does not face difficulty in maintaining his oral hygiene. Additionally, this would also prevent the further progression of gingival recession in that area. Lateral pedicle graft have shown excellent root coverage following its indications.[18] This technique is a better choice than free gingival autografts where second surgical site is necessary. When an adequate width of the attached gingiva is achieved and if required a second surgery for recession coverage can be done. Some times with free gingival autografts blood supply and graft stability is jeopardized, but that kind of difficulty does not arise with lateral pedicle graft.[19] In this case the predictability of root coverage using lateral pedicle graft is average and the second surgical intervention can be followed because there will be sufficient keratinized gingiva for the next recession coverage procedure

## VI. LIMITATION

1. Limited by the amount of adjacent keratinized attached gingiva.
2. Possibility of recession at the donor site.
3. Dehiscence and fenestration at the donor site
4. Limited to one or two teeth with gingival recession.

## VII. CONCLUSION

The treatment options considered for the treatment of denuded root surfaces include pedicle graft, free gingival autografts, connective tissue graft etc. The predictable outcome of treatment in case of one or two Miller's Class III recession teeth are average but the surgical techniques can be done to increase the width of attached gingiva and to increase the chance for a second surgical site. The predictability of the outcome is complete for Miller's Class-I and Class-II conditions using lateral pedicle grafts and also colour matching with the adjacent tissues is also considered to be excellent without another surgical intervention like in free gingival autografts.

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