Case Report

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MANAGEMENT OF MULTIPLE ADJACENT GINGIVAL RECESSIONS USING ORTHODONTIC BUTTONS

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ABSTRACT:

Aim & Objective: The aim of this case report is to find a new technique for management of multiple adjacent gingival lesions with only single surgical procedure.

Case Detail: Gingival recession is the oral exposure of root surface leading to the problem of root sensitivity, esthetic concern and dental caries. The treatment of Gingival recession is needed for reducing above problems. This literature documented that Multiple gingival recessions can be managed by single surgical procedure using coronally advanced flap procedure with orthodontic buttons.

Conclusion: The outcome of this single surgical technique are highly predictable for root coverage in maxillary anteriors with esthetic concerns.

Key words: Multiple gingival recessions, Coronally advanced flap, orthodontic buttons

INTRODUCTION

At the present scenario of periodontal surgery, the management of gingival recession to achieve acceptable esthetics is one of the most challenging aspect. Clinicians are still searching for the appropriate surgical technique to get rid of this problem completely as these conditions presents numerous challenges.

Gingival recession is defined as the location of the gingival margin, apical to the cementoenamel junction (CEJ) with exposure of the root surface [1]

Various etiologic and predisposing factors have been reported in past and faulty tooth brushing appears to be one of the most common cause for Multiple Gingival recession among them which leads to traumatic injuries of periodontium and results in loss of periodontal attachment of the tooth. Major problem associated with gingival recession is that it may accompanied by root caries, esthetic concerns and root sensitivity to the patient. To overcome these problems, the exposed root surface should be covered. Over the years numerous techniques have been tried for the surgical management of multiple adjacent recession defects including Coronally advanced flap with or without vertical incisions, Modified coronally advanced flap , Coronally advanced flap in combination with subepithelial connective tissue graft, Coronally advanced flap combined with

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connective tissue graft or tunnel subepithelial connective tissue graft technique but there are few drawbacks of these techniques which results in either incomplete root coverage or receding of the gingival over the covered root surface back to same position after few months.

This case report presents a case of multiple gingival recessions in the esthetic region of maxilla treated by coronally advanced flap technique using orthodontic button.

CASE DETAIL:

A 26 year old male patient reported to our Department of Periodontics with a chief complaint of tooth sensitivity and unesthetic smile in relation to upper front teeth. On examination, his oral hygiene status was fair without any bleeding on probing in relation to upper anterior teeth and no gingival inflammation associated with the respective area. Miller class I [3] gingival recessions were seen in relation to 13-23 with adequate attached gingiva with attachment loss of 2 mm in relation to 11, 21 and 3mm in relation to 12, 22 and 5 mm in relation to 13, 23. The cause for the multiple gingival recessions in this patient was found to be execution of faulty tooth brushing by the patient.

IOPA 13-23 reveals no alveolar bone loss signify Miller's class 1 multiple gingival recessions.

Blood investigations revealed parameters in their normal range.

Treatment Protocol

Phase 1 therapy

Scaling & Root instrumentation

↓

Root surface modification

↓

Orthodontic button application

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Phase 2 therapy

Root coverage procedure (CAF)

Phase 1 therapy

Complete scaling and instrumentation of root surface was performed using mini-five gracey curettes. Patient was motivated to improve his oral hygiene status and use of chlorhexidine mouth rinse 0.2% was recommended following phase 1 therapy.

Root surface modification

After instrumentation, the root surface was rinsed with saline for at least 60 seconds. Chemical treatment of the root surface was performed using 24% EDTA gel for 2 minutes to remove the smear layer from the dentinal tubules and to improve coagulum adhesion to the root surface following which the root surface was again rinsed with saline for another 1 minute.

Placement of Orthodontic buttons

Orthodontic buttons were then applied on the day of surgery on the labial aspect

of the crown of all six teeth 13- 23 at least 3-4 mm from CEJ with self-cured composites and wait until hardened.

Phase 2 therapy

After three weeks of the phase 1 therapy, surgical phase were performed. Local anesthesia was given to teeth region 13-23 after disinfecting the area with 0.12% chlorhexidine mouth rinse. The surgical technique involved coronally advanced flap procedure without vertical incision using split- full- split approach. The flap consisted of horizontal crevicular incision extended up to distal of 13 on one side and 23 on the other side. The flap was raised with a split-full-split approach in the corono-apical direction such as surgical papilla was elevated split thickness to maintain the blood supply of the flap and gingival tissue which is apical to gingival recession was raised full thickness till 3-4 mm denuded bone and finally most apical part of the flap raised split thickness to facilitate coronal advancement of the flap. Flap mobilization was checked and it was found adequate where marginal position of the flap was able to passively reach a level 3-4 mm coronal to CEJ at each tooth involved.

5-0 sling and 6-0 stabilizing sutures were used where sling sutures were given with 5-0 ethicon in central portion of the flap from the labial aspect of each tooth surrounding circumferentially. Suspended sutures were given for adaptation of papilla to the connective tissue bed with flap margins were stabilized at 3-4 mm coronal to the cementoenamel junction of labial surface of each tooth at the level of the orthodontic buttons. Periodontal dressing was then given to protect the sutures at place. Mechanical plaque control was avoided in the surgical site for 10-15 days following surgery. Patient advised to use chlorhexidine gluconate mouth rinses 0.2% and pt advised to follow the necessary instructions.

Postoperatively, increase in attachment level was reported in relation to 13-23 with complete root coverage in relation to 11,21,12,22 and partial root coverage in relation to 13,23 could be appreciated following 11 month.

DISCUSSION:

Coronally advanced flap was first described by Norberg in 1926. This surgical procedure is based on the coronal shift of soft tissue which is present apical to the denuded root surface[2]. One of the great advantage of this procedure is its applicability for the treatment of multiple recession type defects

It is well known that in multiple adjacent recession type defects (MARTD) there is more extensive avascular surface and further some anatomical characteristics such as thin biotype, decreased width of keratinized tissue (KT), root prominence and root proximity make much more difficult the choice of surgical treatment in these defects compared to localized gingival recession type defects. Both

localized and multiple gingival recessions may be a concern for patients for a number of reasons. In addition to root hypersensitivity, erosion and root caries, aesthetic considerations may also occur[1], particularly in those patients who have a high lip smile line. The main goal of this periodontal plastic surgical procedure was to obtain root coverage and optimal aesthetic appearance in multiple teeth without causing least trauma to the patient.

Multiple adjacent recession type defects (MARTD) present a further challenge since, in order to minimize patient discomfort and to improve clinical outcomes, several recessions must be treated in a single surgical session.

The present case with Miller class 1 multiple gingival recessions in anterior region of maxillary teeth was treated by coronally advanced flap technique using orthodontic buttons by split-full- split approach.

Postoperative results of this case shows an increase in attachment level in relation to 13-23 with complete root coverage in relation to 11,21, 12, 22 and partial root coverage in relation to 13, 23 could be appreciated following 11 month. Main advantages of this surgical procedure includes simple and easy to perform and no need for second surgical site (donor site) as required in case of free gingival and connective tissue grafts, so causes less trauma to patient.

Further clinical studies are required in future to evaluate the significance of this root coverage procedure.

CONCLUSION:

The outcome of this single surgical technique are highly predictable for root coverage in maxillary anteriors with esthetic concerns.

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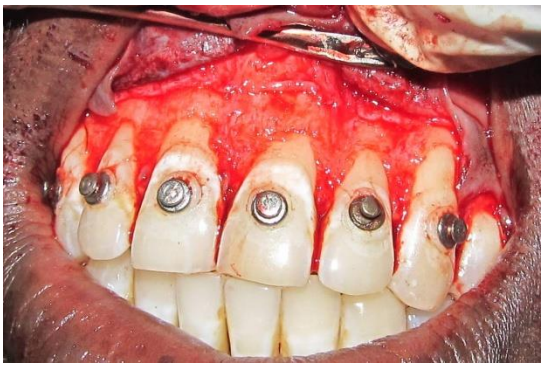
FIGURES:

PRE-OPERATIVE

IOPA

ORTHODONTIC BUTTONS PLACED

OPERATIVE



SUTURING

POST OPERATIVE