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Case Report

Multiple gingival recession coverage with zuchelli's technique in the aesthetic zones of mouth: Case Series

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ABSTRACT
In the digital world aesthetics have become inevitable part of life. Hence the need for 'periodontal plastic surgeries' have increased along with biological and functional need. The present case report is on multiple recession coverage with

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INTRODUCTION

Gingival recession is defined as the apical displacement of the gingival margin in relation to the cementoenamel junction **(CEJ, Glossary of Periodontology Terms, AAP, 2001).**

With the advancement of periodontal surgical techniques, the scope of non-pocket surgical procedures has increased and now encompasses a multitude of areas that were not addressed in the past. Periodontal plastic surgery would be defined as "surgical procedures performed to correct or eliminate anatomic, developmental, or traumatic deformities of the gingiva or alveolar mucosa. (10) The use of a free graft to increase the amount of gingiva was no longer justified, and treatment of gingival recessions became the primary objective of mucogingival surgery.(6)

Gingival recession is often described as an exposure of the root surface caused by the apical displacement of the gingival margin past the cementoenamel junction.(16)

In the last few decades, several surgical procedures have been demonstrated to be successful in achieving root coverage and particularly complete root coverage, i.e., the coverage of the root exposure up to the cemento-enamel junction (CEJ).(15)The main indications for root coverage procedures are esthetic demands, root sensitivity, and shallow root caries lesion. (10)

While complete root coverage can be achieved in Class I and II defects, only partial coverage may be expected in Class III. Class IV recession defects are not amenable to root coverage.(10)Since root coverage procedures are quite predictable and produce patient satisfaction, the therapist should make patients aware of this treatment modality (14)

Numerous surgical techniques have been proposed for the correction of gingival recession. They can be broadly classified into:pedicle grafts, free gingival grafts, connective tissue grafts and membrane barrier-guided tissue regeneration technique. Pedicle graft utilising the coronally advanced flap is the most commonly applied technique to surgically correct gingival recession.(5)The CAF is the first choice of surgical technique in cases with adequate keratinized tissue apical to the defect. It results in optimum root coverage, good color blending with respect to adjacent soft tissues, and good recovery of original soft tissue morphology. (1)

The present case series describes Zucchelli's technique of coronally advanced flap for root coverage in multiple recession defects

CASE REPORTS

CASE 1

A 37-year-old male patient reported to the Department of Periodontology, Government Dental College and

Hospital, Patiala with the chief complaint ofsensitivity and receding gums in the upper right front teeth region.There was no relevant medical history or family history. The patient was was non-smoker and did not use any form of tobacco. The main cause for the condition was because of vigoroushorizontal brushing.

EXAMINATION

After taking the written consent and proper case history, a clinical examination was done. On clinical examination, it was observed that 13, 14,15and 16 had a Miller's Class I recession.Gingival biotype was found to be thick with 2–3 mm of attached gingiva present. The oral hygiene of the patient was good with least amount of plaque and calculus. On interdental probing, 0–2 mm of pocket depth was found in the region of interest with minimal amount of bleeding.

TREATMENT PLAN

Phase 1 Therapy was advised and the patient was instructed to perform a coronally directed roll technique to minimize the toothbrushing trauma to the gingival margin.(6)adequate time was given to alter the technique.Zucchelli's coronally advanced envelope flap was planned as the root coverage procedure which is the most commonly used technique that provides good result. Surgery was planned one month after oral prophylaxis.

SURGICAL PROCEDURE

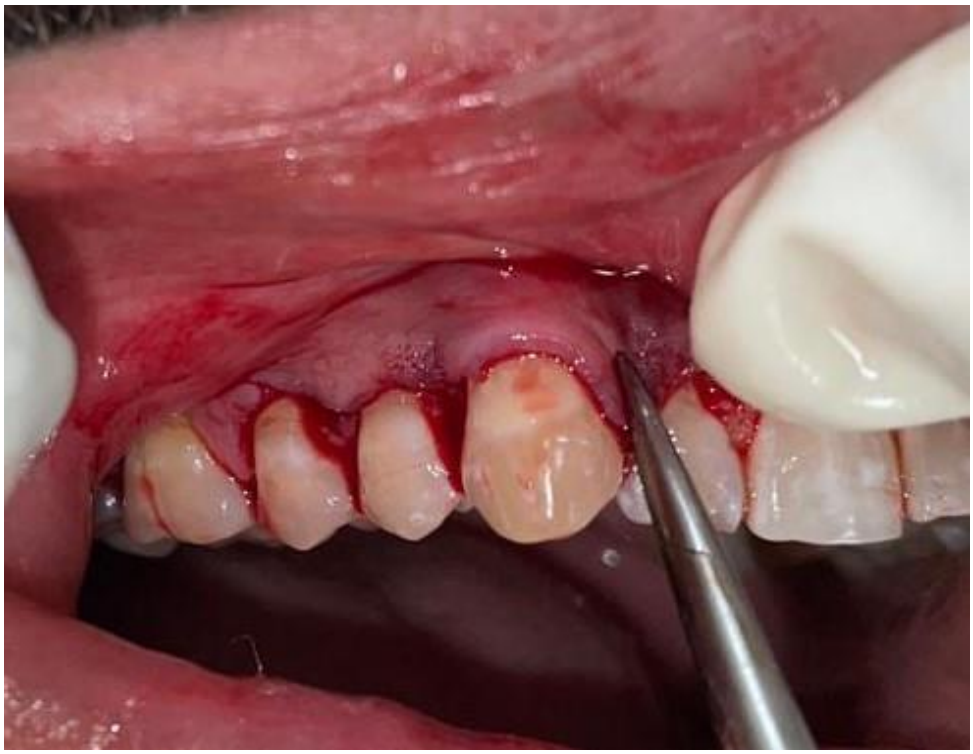
The treatment plan was explained to the patient, and the signature on the consent form was taken.Preanesthetic medication was given to the patient 1 h before the surgery. The whole procedure was carried under a stress-free environment. Perioral and intraoral structures were disinfected using 2% povidone-iodine solution. The area of interest was anesthetized using 2% lignocaine HCl with 1:200,000 epinephrine.

With the help of explorer, CEJ was located on each tooth from the right maxillary central incisor to the second premolar of the same arch. The right maxillary canine was selected as the central tooth. An oblique submarginal incision was made with the help of no. 15c B. P. blade starting from the central tooth to lateral incisor and then up to second premolar

The oblique submarginal incision was given in a way that it extend interdentally from the CEJ of the central tooth to the gingival margin of the adjacent tooth on each side till the last tooth selected.

Then, intrasulcular incision was given along the gingival margin of each tooth. A split-thickness flap was then raised dividing the interdental papilla into surgical papilla and anatomical papilla. A full-thickness flap was raised from the papillary region to the MGJ, and the underlying muscular attachments were detached from the periosteum keeping the blade parallel. Root planning of the previously exposed cementum was done with the help of a curette. Ethylenediaminetetraacetic acid (EDTA) was applied to the root surfaces for 2 min and then rinsed copiously. The anatomic interdental papillae were de-epithelized to create connective tissue beds where surgical papillae were positioned later on. The flap was then repositioned coronally to check the passivity. In case if the flap did not rest passively on the CEJ, the flap was raised even more apically and the muscular attachments were detached as before and then was checked again.

The area was rinsed with normal saline and chlorhexidine 0.2%, and interrupted sling suturing were given with 6-0 vicryl. Postoperative instructions were given. sutures were removed after 12 days. Regular follow-ups were done.



1 MONTH FOLLOW UP

3 MONTHS FOLLOW UP

6 MONTHS FOLLOW UP

CASE 2

A 42 Year old male patient the Department of Periodontology, Government Dental College and Hospital, Patiala with the chief complaint of receding gums in the upper left front teeth region. There was no relevant medical history or family history. The patient was non-smoker and did not use any form of tobacco. The main cause for the condition was because of vigorous horizontal brushing.

EXAMINATION

On examination 23, 24 showed Miller's Class I gingival recession. Maxillary left canine 23 showed recession with 2-mm depth and whereas 14 had a recession of 3-mm depth. Adequate attached gingiva was seen with thick phenotype. On interdental probing 1 mm of pocket depth was found in the region of interest.

TREATMENT PLAN

Scaling and root planning was done after the case history. Zucchelli'smodification of coronally advancedflap with single releasing incision was planned as the root coverage proceduresince the distal teeth adjacent to defects was recession free in order to avoidcreatingfalse recession.Surgery was planned

immediately after 1 week of scaling and root planning as there were no signs of inflammation in the periodontium. The procedure was explained to the patient, and the signature on the consent form was taken.

SURGICAL PROCEDURE

Extraoral scrubbing was done with 5% povidone-iodine and rinsing with 0.2% chlorhexidine mouthwash was done. Local anesthesia (lignocaine HCL with 2% epinephrine 1:200,000) was given to the patient.

After successful local anesthesia, the horizontal incision was given with 15 c no. blade and envelope flap was designed with single releasing vertical incision distal to the last tooth with recession. The vertical incision was given as divergent in line angle of peripheral tooth with recession. The horizontal incision was given in such a manner that it included oblique submarginal incisions interdentally and intrasulcular incisions over the recession defects. The oblique submarginal incisions aid in the formation of new interdental papillae. A 15 no.c blade was used to dissect the flap in a split–full-split manner. The flap was raised from the coronal to the apical direction. Tissue apical to the recession was dissected in a split-thickness manner. Gingiva apical to the recession was raised in a full-thickness manner. The Vertical incision was elevated split thickness, keeping the blade almost parallel to the bone plane, thus leaving the periosteum to protect the underlying bone in the lateral areas of the flap.This full-thickness approach was used to provide the thick portion of the flap for root coverage. At last, the split-thickness approach was used to elevate the apical most portion of the flap. This split-thickness approach was used for easy coronal displacement of the flap. Root planning was done mechanically using curettes (Hu-Friedy, 2R-2 L, 4R-4 L). De-epithelization of the remaining interdental papillae was done to provide a surgical bed for the coronally advanced flap. The flap was then advanced coronally over the exposed root surfaces. The newly prepared interdental papillae were rotated onthe de-epithelized surgical bed.Suturing of the flap started with two interrupted periosteal 6-0 sutures at the most apical extension of the Vertical incision; it proceeded in the apical–coronal direction. This was done to facilitate the coronal displacement of the flap and to reduce the tension on the last coronal 6-0 sling sutures.No periodontal dressing was applied.

The patient was advised to avoid any injury or traction at the site of surgery. The patient was asked not to consume hard food during the first 5 days and not to brush the teeth in the treated area. Amoxicillin 500 mg and ibuprofen 400 mg were prescribed twice a day for 3 days. Chlorhexidine mouthwash (0.2%) twice daily for 1 min was also prescribed. The sutures were removed after 2 weeks of surgery.

1 MONTH FOLLOW UP

3 MONTHS FOLLOW UP

6 MONTHS FOLLOW UP

DISCUSSION

This case series is about the esthetic and functional management of gingival recession.Gingival recession is one of the most common clinical condition encountered by the periodontist. However, not all cases can be considered for surgical management. Both esthetics and functional aspects should be taken into consideration prior to the treatment

Treatment of gingival recession has gained importance from an esthetics perspective in recent years.The main goal of root coverage procedures is to improve the aesthetics of smiles and the functionality of the teeth.It is common for adjacent teeth to be affected by gingival recession.According to Miller's classification, complete root coverage can be achieved in cases of Miller's Class I and II recession defects (14)

In order to minimize the number of surgeries and optimize the esthetic results, all the defects should be simultaneously treated (Zucchelli and De Sanctis, 2000)Multiple adjacent recession defects are a therapeutic challenge considering that several defects must be treated in a single surgical session to minimize patient discomfort. (1) The present modification ofcoronally modified flap as described by de Sanctis and Zucchelli in 2000 allows coronal displacement through the elimination of muscle insertions. This technique not only eliminates the tension but also provides passive displacement of flap till cementoenamel junction without using sutures as there is an absence of muscle pull. Therefore, this technique achieves stable and better root coverage.