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CASE REPORT

ZUCCHELLI'S CORONALLY ADVANCED FLAP AS TREATMENT OF MULTIPLE GINGIVAL RECESSION AND ITS EFFECT ON ORAL HEATH RELATED QUALITY OF LIFE: A CASE REPORT

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ABSTRACT

Gingival recession is a common finding and many times it is caused by faulty tooth brushing. Frequently encountered sequelae of gingival recession are compromised esthetics and dentinal hypersensitivity. It lays negative impact on the quality of life. One of the most commonly employed procedure for treating exposed roots is the coronally advanced flap. This paper presents a case of Miller's Class I gingival recession involving multiple teeth, treated with Zucchelli's modification of conventional coronally advanced flap and its effect on oral health related quality of life as assessed by Oral Health Impact Profile (OHIP)- 14 scores.

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INTRODUCTION

Gingival recession is one of the commonly encountered problems in routine dental practice. It is the term used to characterize the apical shift of the marginal gingiva from its normal position on the crown of the tooth to levels on the root surface beyond the cemento-enamel junction (Loe, Ånerud and Boysen, 1992). A number of etiologic factors have been suggested out of which faulty/overzealous tooth brushing is believed to be the major predisposing factor. Other factors may be malpositioning of the tooth in the arch, occlusal trauma, abnormal muscle/frenal pull, overhanging restorations etc. Gingival recession may be localized or generalized depending upon the number of teeth affected. Gingival recession may impair the quality of life by causing problems like dentinal hypersensitivity, esthetic concerns and increase the potential for root caries. The main goal of the periodontal therapy is directed primarily at the elimination of disease and maintenance of a healthy dentition and supporting tissues (Thamaraiselvan *et al.,* 2015). However, esthetics is becoming an important part of the periodontal therapy in today's world. (Roccuzzo *et al.,* 2002). Various treatment modalities have been used for the coverage of gingival recession such as free gingival autograft, free connective tissue autograft, free pedicle autograft (laterally positioned, coronally positioned) and subepithelial connective tissue graft or combination of these (Padma *et al.,* 2013). Coronally advanced flap is the most commonly performed among the free pedicle tissue graft. This report presents a case of gingival recession involving multiple teeth in the maxillary arch along with the treatment by zucchelli's coronally advanced flap technique and its impact on the quality of life.

CASE REPORT

A 43 years old male reported to the Department of Periodontology, Government Dental College and Hospital, Patiala with the chief complaint of sensitivity to cold in upper teeth since 2 years and also complaint of elongated upper teeth. There was no relevant medical history or family history. Patient was manager in a public-sector bank, non-smoker, does not use tobacco in any form, brushes twice daily with vigorous horizontal motion which is attributed as the cause of the condition.

***Examination*:** On intra-oral examination the periodontium was found healthy with position of the marginal gingiva apical to the cemento-enamel junction in multiple teeth from right maxillary first molar to left maxillary first molar. Oral hygiene of the patient was fair with less amount of plaque and food debris. On probing, pocket depth ranges from 0 to 2mm with delayed bleeding. Width of attached gingiva was adequate with sufficient vestibular depth. A diagnosis of Miller's Class I recession was made clinically.

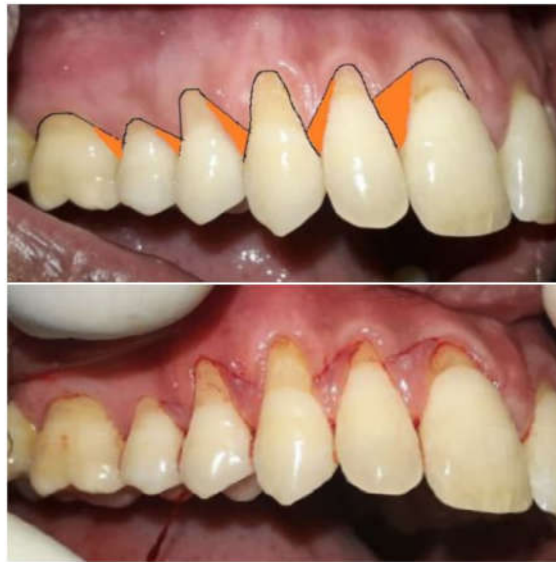

Fig 1. Schematic representation of oblique submarginal and intrasulcular incisions and incisions given

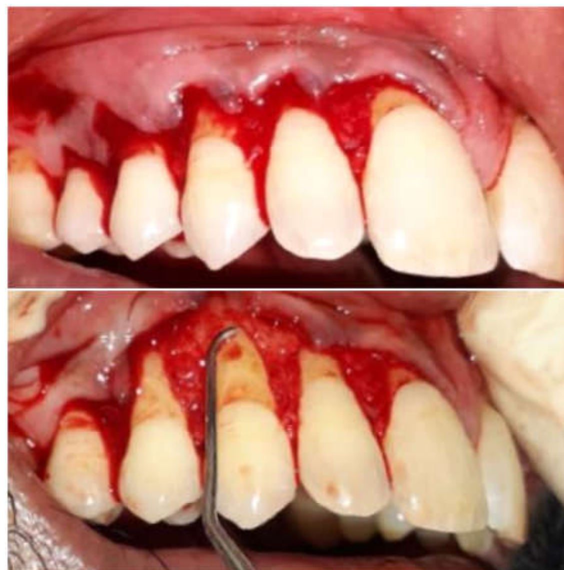

Fig. 2. Combined split and full thickness flap elevated and root planing done

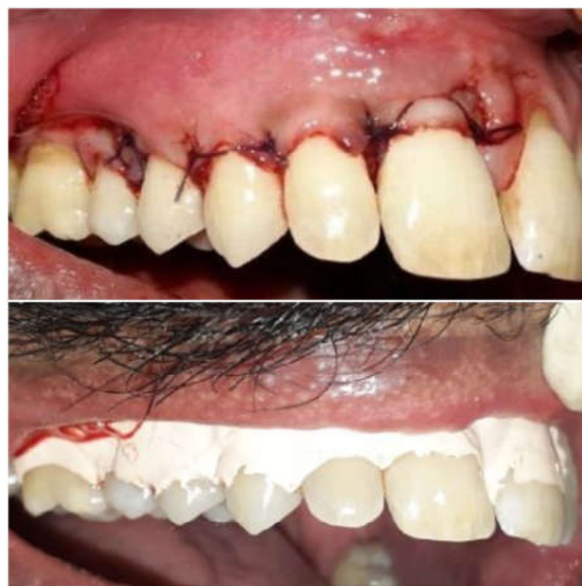

Fig. 3. Interrupted sling sutures given and Periodontal dressing placed

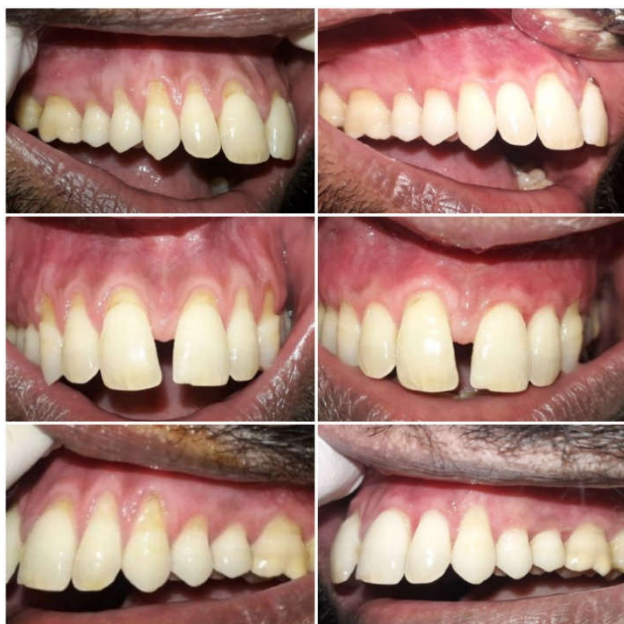

Fig. 4. Pre-operative and 6 months Post-operative

***Investigations*:** Routine blood investigations were done and found within the normal range.

***Treatment*:** Surgical treatment was planned keeping in mind the desires of the patient about esthetics and function. Potential risks and benefits were explained and an informed consent was obtained. Scaling and root planing was performed and oral hygiene instructions were given. Proper brushing techniques were demonstrated to the patient. After 1 month, two surgeries were performed one on each side from molar to central incisor using Zucchelli's coronally advanced flap technique. Surgical site was disinfected with 2% povidone-iodine solution and local anaesthesia was given i.e. lignocaine HCl 2% with 1:200000 epinephrine. Cemento-enamel junction (CEJ) was located on each tooth and central tooth was selected. Using 15-c B.P. blade, the oblique submarginal incision was given interdentally, starting from the CEJ of the central tooth to the gingival margin of the adjacent tooth on both sides. Intrasulcular incision was then given at the recession defects on each tooth. A split thickness flap was raised till the root exposure by keeping the blade parallel to the long axis of the teeth. Apical to the root exposure, gingival tissue was raised in a full thickness manner. Beyond the mucogingival junction, again a split thickness flap was raised by keeping the blade parallel to the bone surface into the alveolar mucosa. This was done to remove the muscular attachments and to facilitate coronal displacement of the flap. The anatomic interdental papillae were de-epithelized to create connective tissue beds. The root surfaces were instrumented with the use of curettes, followed by root contouring with the help of diamond burs. EDTA was applied to the root surfaces for 2 minutes. The area was irrigated with saline and antiseptic solution prior to the suturing. Interrupted sling sutures were tied securely and periodontal dressing was placed. Post-operative instructions were given. Periodontal dressing and sutures were removed after 14 days. Follow ups were done regularly.

Oral health related quality of life: Oral health related quality of life assessment was done by using Oral Health Impact Profile (OHIP)-14 (Slade, 1997) questionnaire which is composed of 14 questions divided into seven subscales. The scores were taken before and after six months of treatment. The total OHIP-14 reduced from 33 to 3, out of 49. There was also marked reduction in the scores of the following subscales after the treatment: functional limitation (7 to 0), physical pain (5 to 0), psychological discomfort (7 to 1), physical disability (6 to 1), psychological disability (6 to 0), social disability (5 to 0) and social handicap (5 to 1).

DISCUSSION

This report presents a case of gingival recession involving multiple teeth in the maxillary arch along with the treatment by zucchelli's coronally advanced flap technique and its impact on the quality of life. Gingival recession is one of the common clinical condition dealt by the dental practitioner in routine practice. Unesthetic appearance and dentin hypersensitivity are the most common sequelae. In order to treat such cases, an attempt should be made to cover the exposed root surfaces. However, not all gingival recessions can be treated but there are certain clinical conditions where we can provide good results with better predictability. Gingival recession has been treated by a number of procedures including coronally or laterally positioned pedicle grafts (Robinson 1964, Tarnow 1986, Allen and Miller 1989), rotational flaps (Harvey 1965), epithelialized free tissue grafts (Miller 1982), connective tissue grafts (Edel 1974, Miller 1993) etc.

As no single technique can be used in every case of gingival recession, the selection of one surgical technique instead of another depends upon the local anatomic characteristics of the site to be treated (Aurer and Jorgić-Srdjak, 2005). The coronally positioned flap has long been used as a means of gaining root coverage ever since it was introduced by "Norberg" (1926) (Sanctis and Zucchelli, 2007). It provides better esthetic results by covering the exposed root surface with adjacent soft tissue present buccally which is of same color and texture. Characteristic features of the technique described in this case report are the absence of vertical releasing incisions, a variable thickness, combining areas of split and full thickness and the coronal repositioning of the flap. Another characteristic feature is the oblique submarginal incisions in the interdental area. Incisions are given obliquely connecting the CEJ of one tooth to the gingival margin of the adjacent tooth. The gingival recession causes difficulty in various functions like speech, aesthetics, consumption of specific food and its negative effects on the quality of life. In this case report OHIP-14 was used to assess the quality of life which is an instrument that measures people's perception of the social impact of oral disorders on their well-being (Slade, 1997).

Conclusion

Gingival recession is a common clinical entity which may lead to problems in daily routine life. Aesthetic and functional impairment affects the oral health related quality of life of the patients. Patient should be examined carefully and strict selection protocols/criteria must be followed before planning any surgical therapy. In the present case report, zucchelli's coronally advanced flap is found to be very effective for the treatment of multiple gingival recessions. Results obtained were stable in terms of root coverage, increased thickness of attached gingiva and resolution of dentinal hypersensitivity. However, regular follow up recalls are necessary to evaluate oral hygiene and stability of the periodontal treatment.

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