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Section: Dentistry

Rebuilding Confident Smile by Restoring the Pink Component by Zucchellie's Technique in Multiple Gingival Recession.

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ABSTRACT

Background: Gingival recession in anterior teeth results in a smile that is likely to be perceived as unaesthetic. It is defined as the location of marginal tissue, apical to cementoenamel junction with exposure of root surface. The most common reason for recession in the adult individual is the loss of periodontal support due to plaque-associated conditions. Abnormal tooth morphology, faulty restorations, and traumatic oral hygiene practices may also negatively influence the position of the interdental soft tissues. Numerous surgical techniques have been proposed for gingival recession correction. Zucchelli modified coronally advanced flap is the technique which avoids vertical releasing incisions. It has advantage of adequate coronal advancement, good anchorage, ample blood supply to the surgical interdental papilla and no unaesthetic scars along incision lines. This case report demonstrates multiple recession coverage in maxillary anterior buccal segment by Zucchelli's technique of coronally advanced flap.

Keywords: Multiple gingival recession, Zucchelli's technique, gingival aesthetics, root coverage, oral health related quality of life, quality of life.

INTRODUCTION

An aesthetically pleasant smile is framed with both white and pink components. Throughout history, considerable attention has been given for enhancement of smile and is one of the primary reasons of patients seeking elective periodontal treatment. An unpleasant smile affects the confidence of the patient during day to day life and public appearances. The presence of gingival recession around anterior, highly visible teeth raises aesthetic concern amongst the patients. Other than aesthetics, gingival recession also raises concerns including predilection to root caries, root sensitivity, cervical abrasion and compromised restoration

Gingival recession is defined as the location of the marginal tissue, apical to the cementoenamel junction (CEJ) with exposure of the root surface.8 It can be caused by faulty tooth brushing, periodontal diseases, malpositioned teeth or Iatrogenic due to orthodontic treatment or subgingival crown preparation.[11] Various surgical treatment modalities are suggested and used in treatment of gingival recession or correction of positioning of marginal gingival.[1-5,10]

This case shows correction of gingival recession involving multiple maxillary anterior teeth, along with improvement in psychological impact post treatment.

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CASE REPORT

A 42 year old female patient reported to the Department of Periodontics, Govt Dental College Patiala, with an aesthetic concern for multiple gingival recession in maxillary anterior teeth and less confidence while smiling.

On examination, multiple Millers class I recessions were present involving 11, 12, 13, 14, and 21, 22,23,24.

The patient also presented a history sensitivity since past two years and horizontal tooth brushing.

The gingiva was healthy and with no signs of inflammation. Patient was also asked to respond to Oral Health Impact Profile-14 (OHIP-14) questionnaire to evaluate psychological impact of gingival recession. Phase I therapy including oral hygiene instructions, brushing technique correction, and scaling and root planing was given. Written informed consent was obtained from the patient

and Zucchelli's coronally advanced flap was performed.

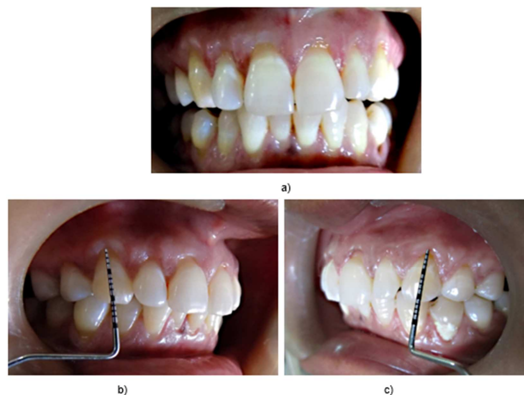

Figure 1: Pre-operative photographs showing a) multiple gingival recession in, b)11, 12, 13, 14, and c) 21, 22,23,24.

Surgical management

All instruments to be used in surgery were sterilizes by autoclaving (temperature 1210C and 15 lb pressure for 15 minutes). The facial skin all around the oral cavity was scrubbed with povidone iodine solution and patient was asked to rinse with 0.2 % chlorhexidine solution.

Anesthesia

A solution of 2% Lignocain with 1:2,00,000 adrenaline was administered for local anaesthesia.

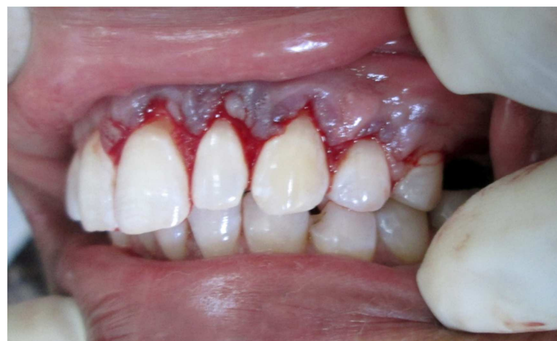

Figure 2: Photograph showing Incision and Flap elevation

Surgical procedure

The incision outline was marked with an indelible pencil. Horizontal oblique incisions were given connecting the CEJ of one tooth to the gingival margin of the adjacent tooth, on both sides, keeping the tooth with maximum recession in center. 2 A split thickness flap was reflected till the exposed root and then a full thickness flap was raised apically. Again a split thickness flap was reflected beyond mucogingival junction to ensure adequate coronal placement of the flap. Interdental papillae were completely deepithelialised to expose the underlying connective tissue and to eliminate the epithelium that might interfere with healing. After flap reflection the root surface was and thoroughly cleaned for any remnant calculus scaling and root planing was done. Following this flap is advanced coronally, papillae of the flap were rotated towards the ends of the flap and were displaced on the prepared connective tissue beds of papillae. After ensuring precise adaptation, the flap was placed and secured with sling sutures. The surgical site was dried with gauge and then covered with periodontal dressing (Coe Pac).

Post-surgical management-

The patient was instructed not to remove the pack or disturb the surgical site for 2 weeks. Other post-operative instructions were given. Patient was prescribed to take Amoxicillin 500mg tds and Ibuprofen 400mg tds for 5 days postoperatively. Patient was also advised to rinse with 0.12% chlorhexidine twice daily. The periodontal dressing and the sutures were removed after 2 weeks post operatively. In addition, patient was checked for any complication such as necrosis, swelling, bleeding, delayed healing, and infection. No complication was seen.

On 6 months re evaluation-

After 6 months recalled for clinical re evaluation and was asked to respond to OHIP 14 questionnaire. Stable clinical results were seen. There was also a decrease in total OHIP 14 score from 20 to 2 indicating improvement in quality of life post treatment.

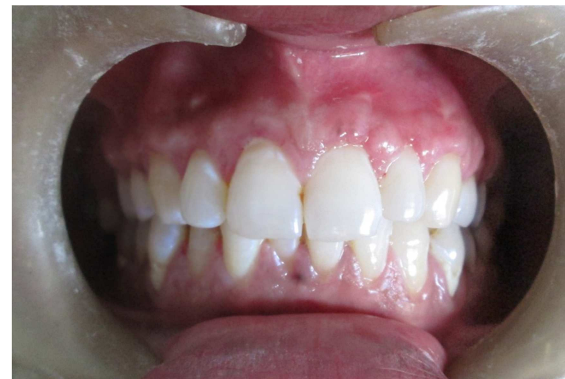

Figure 3: Photograph showing 6 months post-operative.

DISCUSSION

A beautiful smile is psychologically satisfying. It boosts confidence and makes a person confident in public appearance and day to day life. Multiple gingival recession in anterior teeth leads to elongation of clinical crown which is aesthetically compromising. There are different treatment modalities used and recommended to correct the position of marginal gingiva in recession cases since years. Most of these surgical options gives satisfactory results, with maintainance. One of the most commonly employed technique is the 'coronally repositioned flap' introduced by Bruiestein in 1970 and modified by Allen & Miller

in 1989.[1] Further, in 2000 Zucchelli & De Sanctis modified this technique.

There are various clinical and biological advantages of Zucchelli technique over the conventional technique.[11] Covering all defects simultaneously by minimizing the number of surgeries, and without compromising the desired esthetic results, also reduces psychological discomfort of patient.

(Zucchelli and De Sanctis, 2000).

An envelope type of flap without vertical releasing incisions does not compromise the blood supply and there is no unaesthetic scars along incision line. Also a split – full – split thickness flap, ensures adequate coronal advancement, good anchorage and ample blood supply to the surgical interdental papillae.

In the present case using Zucchelli technique of coronally advanced flap resulted in adequate root coverage without any scar formation. The color match of the tissue was also excellent providing better aesthetic results. The complaint of hypersensitivity was also resolved after root coverage.

Slade (1997) developed short version, OHIP-14 with only 14 questions divided into the seven dimension/domains: functional limitation, physical pain, psychological discomfort, physical disability, psychological difficulty, social obstacle and social handicap.[6,7] Oral Health Impact Profile – 14 (OHIP-14) is a well validated measure of Oral Health related Quality of Life that detects dysfunction, discomfort and disability attributable to oral conditions based on WHO's "disease-impairment-disability-handicap" model. An improvement psychological discomfort domain and psychological disability domain along with total OHIP- 14 score suggests about, the psychological burden of patient, due to gingival recession in anterior teeth, and also reduction in this burden post treatment.

The importance of tooth brushing technique for the long-term maintenance of clinical outcomes achieved by root coverage procedures is well established. According to Wenstrom and Zucchelli (1996), an altered non traumatic toothbrushing technique was crucial for achieving successful outcomes of root coverage procedures.[9] So, the patient was instructed, motivated and correct brushing technique is reinforced in every subsequent visit. An adequate root coverage with stable results was achieved over 10 months follow up.

CONCLUSION

Multiple gingival recession in anterior teeth in aesthetic area has psychological effect on patient. It affects public appearance and Quality of Life of patient. A good, stable and aesthetically colour matched coverage of these recession defects reduces psychological burden and improves quality of life. Zucchellie's technique is an effective method to restore the pink gingival component of aesthetically pleasing smile along with resolving the problem of hypersensitivity.

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