CASE REPORT

TREATMENT OF GINGIVAL RECESSION WITH SEMILUNAR CORONALLY REPOSITIONED FLAP : A CASE REPORT

Dr. Shahnaz*, Dr. D. Rambabu **, Dr. Savan Shetty***
Dr. S. Nisha**** , Dr. Amit De****

ABSTRACT

Gingival recession associated with dentinal hypersensitivity is one of the commonest problem reported to a dentist. The treatment of choice for such cases should address biological treatment as well as patient's satisfaction. Semilunar coronally repositione flap (SLCRF) for root coverage is used for isolated gingival recession in maxillary anteriors area. This paper reports the treatment of gingival recession associated with sensitivity. The procedure involved utilization of semilunar coronally repositioned flap procedure. The semilunar coronally repositioned flap procedure successfully covered the recession and reduced the patient's complaint of hypersensitivity and enhanced the esthetics too.

KEY WORDS

Recession, sensitivity

ABOUT THE AUTHORS

* 3rd year M.D.S student
**Professor & Head of the Department
*** Professor, **** Senior Lecturer
Department of Periodontics
Haldia Institute of Dental Sciences & Research, Haldia, W.B.

CORRESPONDING AUTHOR

Dr. Shahnaz
2nd year M.D.S student, Department of Periodontics,
Haldia Institute of Dental Sciences & Research, Haldia, W.B.
e-mail - shahnazdental2010@gmail.com

INTRODUCTION

Gingival recession is an apical shift of the gingival margin with exposure of the root surface to the oral cavity[1]. Gingival recession is often found in populations with good oral hygiene[2,3], when it is most commonly located at the buccal surfaces[4] and may be associated with wedge-shaped defects in he cervical area of one or more teeth[2]. However, gingival recession is also found in populations with poor standards of oral hygiene in which it may affect other tooth surfaces[5,4]. Recession may exist in the presence of normal sulci and non-diseased interdental crestal bone levels, or it may occur as part of the pathogenesis of periodontal disease during which alveolar bone is lost. One etiological factor that may be associated with gingival recession is a pre-existing lack of alveolar buccal bone at the site[6]. These deficiencies in alveolar bone may be developmental (anatomical) or acquired (physiological or pathological)[7].Therefore, in 1993, Miller[8] introduced the term 'periodontal plastic surgery', accepted by the international scientific community in 1996, which was defined as 'surgical procedures performed to prevent or correct anatomic, developmental, traumatic or disease-induced defects of the gingiva, alveolar mucosa or bone'[9].

The ultimate goal of a root coverage procedure is complete coverage of the recession defect with a good appearance related to the adjacent soft tissues and minimal probing depth following healing[10, 11, 12, 13, 14].

Surgical procedures used in the treatment of recession defects may basically be classified as follows[15]:

- Pedicle soft-tissue graft procedures:
  - Rotational flap procedures (laterally sliding flap, double papilla flap, oblique rotated flap);
  - Advanced flap procedures (coronally repositioned flap, semilunar coronally repositioned flap);
  - Regenerative procedures (with barrier membrane or application of enamel matrix proteins)

- Free soft-tissue graft procedures:
  - Epithelialized graft;
  - Subepithelial connective tissue graft

The international literature has thoroughly documented that gingival recession can be successfully treated using several surgical procedures[1], irrespective of the technique utilized, provided that the biological conditions for accomplishing root coverage are satisfied (no loss in height of interdental soft and hard tissue)[13].

Tarnow (1986) reported the semilunar coronally re-positioned flap (SLCRF) technique, which is a procedure indicated for the treatment of gingival recession in areas with minimal labial probing depth (PD) and adequate band of keratinized gingiva. It is described as a coronally advanced, tensionless and sutureless flap that does not involve the adjacent papillae, thus preserving the aesthetics[16]. Additional advantages of the procedure, according to the author (Tarnow 1994), include the fact that it does not shorten the vestibule and results in a perfect colour blend with adjacent tissues, with a simple, predictable and fast procedure[17].

CLINICAL CASE REPORT

A 35-year-old female was referred to Department of Periodontics, Haldia Institute of Dental Sciences & Research, Purba Mednipur, West Bengal complaining of hypersensitivity in maxillary anterior tooth. During the clinical examination, it was noted that there was Miller's class I gingival recession in tooth number 23. Gingival recession was associated with hypersensitivity. The teeth presented shallow probing depth (1mm) without bleeding on probing and the recession height was 3 mm. Patients oral hygiene was good and the gingiva was free of inflammation.

Pre-surgical procedure

The patient was first submitted to initial preparation comprising of scaling, root planing and oral hygiene instructions. Patient was instructed to follow modified stillman brushing technique.

After 2 weeks, she was scheduled for root coverage procedure with coronally advanced flap. The pre-surgical measurement was assessed by using

Fig 1: Recession with respect to 23

Fig 2: Semilunar incision given

Fig 3: Semilunar flap coronally advanced

Fig 4: Coe pack given

Fig 5: Follow up after 2 weeks

Fig 6: Follow-up after 3 month

Fig 7: Follow-up after 6 month. Recession coverage of 3 mm

UNC -15 probe (Fig.:1). The purpose and design of the procedure was explained to the patient.

Surgical procedure

The surgical procedure was performed under local anaethesia. The SLCRF procedure was performed as originally described by Tarnow et al. (1986). Briefly, a semilunar incision was carried out following the outline of the gingival margin. This incision ended into the papilla on each inter-proximal area of the tooth to be treated, but not all the way to the tip of the papilla (Fig.2). At least 2 mm of gingiva was preserved on each side of the flap in order to preserve the blood supply. The semilunar incision was curved apically to an extent to guarantee that the apical part of the flap rests on bone after the coronal advancement to cover the root. An intra-sulcular incision was performed mid-facially. Then, a split-thickness dissection was performed from the initial incision coronally until connecting to the intra-sulcular incision. The mid-facial tissue was completely released, coronally positioned to the CEJ and held in place against the tooth with a moist gauze pad placed with light pressure, perpendicular to the flap, for 5 min (Fig.3). No sutures were placed. A surgical dressing (CoePak) was placed (Fig.4). Medication was prescribed. Patient was advised to take soft diet and not to brush at the surgical site for atleast 14 days after surgery. The pack was removed after 14 days (Fig.5)

The patient experienced no major postoperative problems, and she reported only minimal pain. Postoperative review at 3 month after surgery showed good healing, without gingival inflammation (Fig.6). At the final evaluation, 6 months after surgery, there was good recession coverage (Fig. 7).

DISCUSSION

The semilunar coronally repositioned has the following advantages.

(1) There is no tension on the flap after coronally repositioning it.

(2) There is no shortening of the vestibule.

(3) The papillae mesial and distal to the tooth being treated remain cosmetically unchanged.

(4) No sutures are needed because of the lack of tension of the tissue being coronally positioned.

The indications for the procedure are when there is gingival recession with minimal labial sulcus depth. There should be an adequate zone of existing keratinized tissue. If there is lack of keratinized tissue, it should be created 2 months previously by means of a free autogenous soft tissue graft. The procedure can be used where esthetics is the main concern of the patient. The procedure can also be used where there has been recession around previous full coverage restorations in the anterior section of the mouth, where the patient has a high enough lip line to show the denuded roots. The coronal positioning of the tissues before placement of the new restoration will allow the restorative dentist the ability to make shorter clinical crowns, instead of longer unesthetic ones[16].

Marggraf et al., reporting on 2 years of follow-up, found a mean amount of root coverage of 72% and complete coverage was observed in 54.5% of treated teeth[18]. Romanos et al., reporting on 5–8 years of followup, detected a mean of 2.64 ± 1.3mm of reduction on recession, 0.34 ± 1.4mm of gain in keratinized gingiva and a complete coverage of gingival recession in 18/75 teeth (24%)[19]. Bittencourt reported 90.95% of root coverage and a complete soft-tissue root coverage in 52.94% of treated cases[20]. These results, although variable, are clearly superior to the ones obtained in the present sample. Such important discrepancies are likely explained by the differences in the surgical protocols and measurement methods used.

Others additional methods are also used for flap fixation such as sutures (Marggraf et al. 1985, Romanos et al. 1993) or adhesives (Bittencourt et al. 2006, 2007). Additional flap fixation and stabilization may yield enhanced healing in SLCRF-treated sites. Moreover, Bittencourt et al. (2006, 2007) used microsurgical techniques that might have improved the handling of thin and delicate soft tissues during the semilunar procedures, thus enhancing their clinical outcomes [18,19,20,21].

CONCLUSION

Semilunar coronally repositioned flap is a uncomplicated technique which provides satisfactory results for treating Miller's class I and II gingival recession defects in the anterior region. This case report indicates that teeth with narrow gingival recession can be successfully treated by the semilunar coronally repositioned flap. Further studies with larger sample size are needed in order to evaluate the long term stability of the obtained positive result.

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