



Root Coverage in Teeth with Unfavourable Prognosis - Success and Predictability

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Abstract

The cosmetic procedures involving gingival reconstruction have become an integral part of current periodontal practice, the ability to cover exposed and sensitive root surface has added a functional and aesthetic angle to the traditional concept of biological and functional periodontal health.

Most reports on root coverage have focused on the treatment of class I and II recession. While there is a general agreement on the lack of predictability of the success and the inability to obtain 100% coverage in class III recessions. In the recent years for the root coverage many treatment modalities have emerged, based on the surgical technique systemic review on literature have showed that connective tissue graft (CTG) later modified with pedicle flap (Bilaminar technique) is currently considered to be a better predictability in terms of attaining maximum percentage of root coverage.

This paper presents a pilot study to assess the success and predictability of root coverage in such tooth with unfavorable prognosis when patients are willing to save the tooth and not willing to undergo extraction and replacement.

Keywords: Root Coverage; Gingival Recession; Connective Tissue Graft

Abbreviations

CEJ: Cemento Enamel Junction; CTG: Connective Tissue Graft; PD: Probing Depth; CAL: Clinical Attachment Level; KER: Width of Keratinised Gingiva; RD: Recession Depth

Introduction

It is important to differentiate between success and predictability with regard to root coverage procedures. Success relates to the average percentage of root coverage achieved, whereas predictability describes the percent of the treated teeth in which complete root coverage is achieved [5].

Most reports on root coverage have focused on the treatment of class I and II recession [6]. While there is a general agreement on the lack of predictability of the success and the inability to obtain 100% coverage in class III recessions, very few reports have focused on the predictability and factors governing the degree of coverage expected in these situations.

Class III recession is defined as marginal tissue recession extends to or beyond the muco- gingival junction. Loss of bone or soft tissue, apical to the CEJ but coronal to the level of the recession defect [7].

Evidence on treating Miller Class III and IV defects is both scarce and weak and does not provide any clear indications on the potential of interproximal bone loss to impact on root coverage.

The results of the meta-analyses of controlled and randomized clinical trials published by Rocuzzo, *et al.* [3] and Clauser, *et al.* [4] reporting that greater baseline recession depths were always associated with decreased complete root coverage.

Aim

The aim of the present pilot study is to assess the success and predictability of root coverage in such tooth with unfavorable prognosis when patients are willing to save the tooth and not willing to undergo extraction and replacement. In this pilot study A Modification of Laterally positioned flap (Grupe and Warren [1]) with connective tissue graft (Langer and Langer [2]) was performed.

Clinical measurements

The patients were selected according to miller classification of class III and willing to retain the tooth due to anterior aesthetic region. Patients were explained about the procedure and the outcome and were willing to undergo the procedure. All participants signed a consent form and completed a baseline examination.

Pre-surgical procedures

All subjects received pre-surgical therapy, which included oral hygiene instructions, a session of prophylaxis, and scaling and root planning.

Before surgical procedure the tooth has undergone root canal treatment and splinting with the adjacent tooth using pictures or wire and composite.

The following clinical parameters were assessed at baseline and at the final postoperative evaluation after surgery:

- Probing depth (PD),
- Clinical attachment level (CAL),
- Width of keratinized gingiva (KER) and
- Recession depth (RD).

Baseline measurements were performed on the day of surgery. All clinical measurements were made on the mid buccal aspect of each tooth using a periodontal probe.

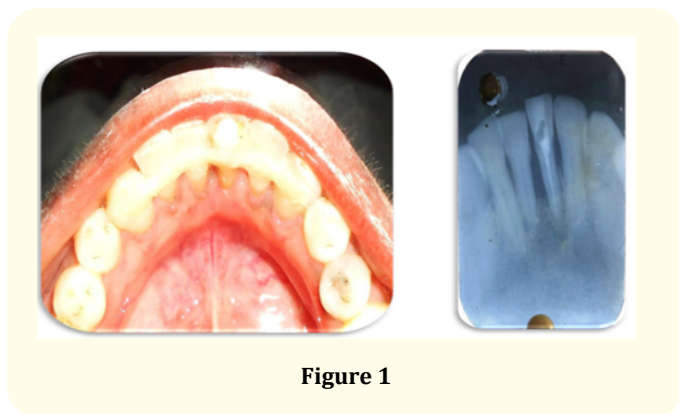


Figure 1

Surgical technique

Following local anesthesia, the exposed root surfaces were treated mechanically with the use of Gracey curettes and ultrasonic instruments.

Modification of Laterally positioned flap (Grupe and Warren [1]) with connective tissue graft (Langer and Langer [2]) was performed.

Partial thickness flap elevated on one side of the recession using a 15 blade, vertical incision was made, the most apical portion of the flap was elevated in a split-thickness manner to facilitate lateral displacement of the flap.

A pouch was created on the other side of the recession. dissection into the vestibular mucosa was carried out to eliminate muscle tension in the apical portion of the flap. Preparation of the donor site was performed immediately after completion of the flap.

Dense connective tissue was harvested from the palate using an incision between the distal aspect of the canine and the mesial aspect of the first molar with a no. 15 blade.

The donor site was sutured with a 4 - 0 vicryl suture. The graft was trimmed to achieve a thickness between 1.5 and 2.0 mm and enough width. The connective tissue was placed covering the root surface and tugged inside the pouch partially and a simple interrupted suture was given between the pouch and graft using 4 - 0 vicryl suture, and the flap was sutured positioned laterally to cover the graft.

Sutures were removed after 10 days and patients recalled on regular intervals till 3months.

Results

	CASE 1		CASE 2		CASE 3	
	Initial	3 months	Initial	3 months	Initial	3 months
PD (mm)	1.00	1.00	2.00	1.00	1.00	2.00
RD (mm)	7.00	3.00	7.00	3.00	8.00	4.00
CAL (mm)	8.00	4.00	9.00	4.00	9.00	5.00
KER (mm)	1.00	4.00	1.00	4.00	0.00	3.00

Table 1: Comparison of variables at initial and final examination.

Postoperative healing was uneventful.

All three subjects showed a good level of plaque control during the study period.

All clinical parameters changed significantly between the beginning of the study and the final examination, with the exception of PD.

A statistically significant decrease in RD was observed at the end of the evaluation period. The mean RD at baseline was 7.00 ± 1.00 mm and at the final examination was 3.00 mm.

Treatment resulted in a significant gain in CAL at the end of the clinical evaluation period.

Case 1

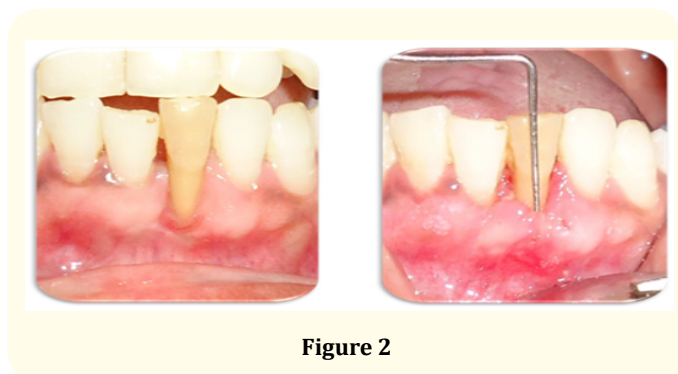


Figure 2

Case 2



Figure 3

Case 3



Figure 4

Discussion

The use of the free gingival graft for Root coverage procedures involving a two-step procedure first described by Bernimoulin, *et al.* [8] and later modified by Maynard [9]. In summary, the technique consists of creating attached gingiva by means of a conventional free gingival graft and later coronally positioning the grafted tissue to cover the gingival recession.

In this pilot study A Modification of Laterally positioned flap (Grupe and Warren [1]) with connective tissue graft (Langer and Langer [2]) was performed.

Though complete root coverage was not obtained in this study but 59% of coverage with increased keratinised gingival width of about 3 to 4mm was achieved in a single step.

Previous studies on root coverage are done on recession depth which is ≤ 5 mm.

The mean root coverage achieved in this study is 59% which is in argument with the study by Wennström JL, Pini Prato GP in 1997 which is 68% when the initial recession depth is 4mm whereas in this study the initial RD was 7 ± 1 mm. Which may be the reason for reduced root coverage percentage.

Conclusions

Hence this technique may be used as an alternative for the regular two stage technique proposed by Bernimoulin, *et al* [8].

This technique is a viable alternative for teeth with hopeless prognosis. even if the tooth longevity is minimally enhanced with soft tissue this will makes it easier for hard tissue augmentation later if considering replacement with an implant.

Bibliography

1. Grupe H and Warren R. "Repair of gingival defects by a sliding flap operation". *Journal of Periodontology* 27 (1956): 92.
2. Langer B and Langer L. "Subepithelial connective tissue graft technique for root coverage". *Journal of Periodontology* 56.12 (1985): 715-720.
3. Rocuzzo M, *et al.* "Periodontal plastic surgery for treatment of localized gingival recessions: a systematic review". *Journal of Clinical Periodontology* 29 (2002): 178-194.
4. Clauser C, *et al.* "Evidence-based mucogingival therapy. Part 2: Ordinary and individual patient data meta-analyses of surgical treatment of recession using complete root coverage as the outcome variable". *Journal of Periodontology* 74.5 (2003): 741-756.
5. Paulo m camargo, *et al.* "The use of free gingival grafts for aesthetic purposes". *Periodontology 2000* 27 (2001): 72-96.
6. Bouchard P, *et al.* "Decision-making in aesthetics: Root coverage revisited". *Periodontology 2000* 27 (2001): 97-120.
7. Miller PD Jr. "A classification of marginal tissue recession". *International Journal of Periodontics & Restorative Dentistry* 5.2 (1985): 9-13.
8. Bernimoulin JP, *et al.* "Coronally repositioned periodontal flap. Clinical evaluation after one year". *Journal of Clinical Periodontology* 2.1 (1975): 1-13.
9. Maynard JG. "Coronally positioning of a previously placed autogenous gingival graft". *Journal of Periodontology* 48.3 (1977): 151-155.

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