



Double Papilla Technique for Root Coverage: A Case Report

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Abstract:

Gingival recession can result in an unesthetic appearance, hypersensitivity, and root caries. Esthetics being one of the main concerns of the patient, especially in anterior region. Hence, the treatment of choice for root coverage for the anterior teeth should address both the biological and the aesthetic demands. Off the surgical procedures, double papilla technique evolved from treating defects where tissues adjacent or apical to the defect alone may be inadequate for grafting purpose. This technique can be used in areas with shallow vestibule and palatal areas. The double papilla technique utilizes the predictability of free gingival graft and is an effective and predictable method of obtaining esthetic root coverage.

Keywords: Double papilla technique, aesthetics, recession, root coverage

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1. Introduction

The experiences of many clinicians in the past decade have demonstrated that the restoration of a destroyed gingival unit about a tooth has become a more predictable therapeutic expectation. The several wound healing studies in this area have influenced the clinical techniques and made their objectives more realistic. Interest has centered principally on the repair of gingival tissue about roots of teeth where denudation and exposure of tooth surfaces has occurred^{1,2}. The laterally repositioned flap or the pedicle flap from an edentulous donor area are techniques which have described the use of an adjacent donor site. These methods of gingival repositioning have required a width of gingiva equal to or slightly greater than the tissue missing at the recipient site. Frequently a sufficient amount

of gingiva is not present on an adjacent tooth or the gingiva present in a nearby area is inflamed which decreases the possibility of successful replacement of the lost gingival unit. Plastic and reconstructive surgical approach which has successfully demonstrated the restoration of lost gingiva is the double papillae repositioned flap³. The double papilla technique is opted to treat Miller's Class II recession in this case report.

2. Case Report

A male patient aged 38 years came to the department of Periodontology with Miller's Class II gingival recession in relation to the buccal aspect of 12. The patient was in good health and had not received any periodontal therapy previously. On intraoral examination, the gingival recession (GR) was 5mm in length and 3 mm in width (Figure 1). The attached



gingival width adjacent to the recession was 3 mm and probing depth of the adjacent tooth was 2 mm on mesial side, 1 mm on buccal side, 3 mm on distal side, and 2 mm on palatal side.

3. Surgical Technique

Local anesthesia with 2% lidocaine was administered, and two horizontal incisions were made on the interdental papilla, parallel to the cemento-enamel junction of the tooth to be treated with no. 11 blade. Two releasing incisions were made obliquely at the line angles of the adjacent teeth (Figure 2). Partial thickness flap on the mesial and distal portions was elevated (Figure 3), and the root surface which was exposed was planned thoroughly using a curette. Root conditioning was performed using tetracycline for 5 min. De-epithelialization of the flap was done and was drawn close to cover the tetracycline treated root surface.

The other pedicle flap which was un-deepithelialized was kept in position to cover the previous flap. Interrupted suturing (4-0 vicryl) was done across the medial area of the two papilla flaps (Figure 4). Surgical site and periodontal dressing was given with coe-pack (Figure 5). The patient was advised to refrain from brushing at the grafted site for 15 days. The patient was instructed to rinse with 0.2% of chlorhexidine mouthwash twice daily for 15 days. Antibiotic (amoxicillin 500 mg, 3 times a day for 5 days) and analgesic (paracetamol 500 mg, 3 times a day for 5 days) was prescribed. The patient was reviewed after a week, 2 weeks. 60% root coverage was observed at 2-week follow-up (Figure 6).

4. Discussion

Gingival recession (GR) could be defined as the location of the gingival margin apical to the cemento-enamel

junction.⁴Since, recession of the gingival margin results in an impaired esthetic appearance and sometimes dental hypersensitivity, these could be treated to increase the attached gingival width along with the esthetics.⁵In the present study we have utilized the double papillae repositioned flap in order to restore a destroyed gingival unit.

The technique in the case report has utilized transplantation of the tissue by using two interdental pedicle flaps. These flaps consist of a portion of attached gingiva which is raised from the donor site but left attached to the surrounding mucosa by a bridge of tissue known as the pedicle of the flap. This surgical design would give access to the masticatory mucosa in the interdental space that could be utilized as a graft to the radicular surface of the denuded tooth. It should also be noted that the initial preparation of the recipient area constitutes an essential phase of treatment¹. It consists of scaling and root planning and elimination of as many of the local environmental factors as possible. The benefits one may gain in initial preparation prior to surgical procedure may reduce the inflammatory process, that changes the quality of the tissue for ease of manipulation and would confine the necessary surgical technique to a more limited area thereby providing a wider band of gingiva.

Further, the adequacy of blood supply is paramount for the wound healing and, therefore, the proximity of the adjacent periodontal ligaments must be considered. Also, before the periodontal dressing was placed, the tissue has to be adapted to the recipient site with a warm moist cotton pad which allows the double papilla graft to remain against the tooth surface with a minimal amount of extravasation interposed between the tissue and tooth. Pressure is



essential to assist in the elimination of dead space between the tooth and graft, and also may prevent the formation of a hematoma under the portion of the flap supported by periosteum or bone⁶.

The double papilla procedure is technique sensitive but has good results in treating isolated GRs. The partial thickness double papilla pedicle graft technique was first proposed by Cohen and Ross.¹ Hall stated that double pedicle graft had “very low predictability in most practitioners’ hands.”⁷ The 1989 World Workshop in clinical Periodontics concluded “the double papilla pedicle has very limited usefulness.”⁸ Its weaknesses are its poor predictability and the technical skills required to perform the procedure. Nelson proposed a technique that combines a free connective tissue graft with a full thickness double papilla graft.⁹ Harris further proposed the use of a partial thickness double pedicle flap rather than a full thickness one overlying a free connective tissue graft as partial thickness flap allows the connective tissue graft to receive vascular supply both from the recipient bed and from the flap overlying it.¹⁰

The advantages of this technique include excellent color matching, good vascular supply, root coverage, and reduced hypersensitivity.¹¹ The greatest advantage of this procedure is that there is no need for an additional donor site.¹² However, few factors have to be considered when opting for this technique. The interdental papilla adjacent to the GR should be thick, There should be an absolutely healthy periodontium adjacent to the n to be treated and this technique cannot be practiced to treat multiple adjacent GRs.

5. Conclusion

A number of periodontal plastic surgical procedures have been proposed and

developed by clinicians for the treatment of GR. However, the choice of mucogingival surgical technique to treat a GR defect depends on the clinician’s skill, the type of GR and the availability of donor tissue. The double papilla technique can be carried out easily and had demonstrated good esthetic results in this case report.

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Figures



Figure 1: Pre operative.



Figure 2: Incisions made



Figure 3: Partial thickness flap was elevated for root conditioning.



Figure 4: Suturing done with 4-0 vicryl



Figure 5: Coe pak placed



Figure 6: 15 Days post-operative