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RESEARCH ARTICLE

DOUBLE PAPILLA REPOSITIONED FLAP FOR THE TREATMENT OF ISOLATED RECESSION - A CASE REPORT

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Abstract

Gingival recession can result in an unesthetic appearance, hypersensitivity, and root caries. The physiological well-being of the patient is a significant factor associated with the success of dental therapy. Numerous techniques are advocated for recession coverage. Although, connective tissue graft serves as a gold standard, it requires a second surgical site -a major disadvantage. When aesthetic demand is high and vestibule is shallow, double papilla flap can serve as a potential treatment alternative. The double papilla technique evolved from treating defects where tissues adjacent or apical to the defect alone may be inadequate for grafting purpose. The double papilla technique combines the esthetic results of pedicle graft with the predictability and usefulness of free gingival graft making it an effective and predictable method of obtaining esthetic root coverage.

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Introduction:-

Gingival recession is defined as the apical displacement of the gingival margin to the cementoenamel junction (CEJ)^[1], resulting in patient complaints such as poor esthetics, dentin hypersensitivity, and inability to perform proper oral hygiene procedures^[2]. Numerous factors may play a role in gingival recession, such as vigorous tooth brushing, chronic gingival inflammation, and different anatomic features such as thin gingival biotype, lack of keratinized tissue, buccal prominence of teeth, and high frenum attachment^[3]. The use of pedicle grafts,^[4,5] free gingival grafts,^[6,7] free connective tissue grafts,^[8,9] and guided tissue regeneration have shown effective results for root coverage^[10,11].

Cohen and Ross^[12] introduced the method in which bilateral interdental papillae are used as donor tissue for localized root coverage. It is a type of rotational flap technique which does not require a second surgical site. In this technique, there is less chance of flap necrosis and suturing is easy because interdental papillae are thicker and wider than labial gingiva on the single root surface.

Although Cohen and Ross reported more than 85% success in covering denuded roots, the degree of success varies among other clinicians^[13]. The double papillae pedicle graft is most appropriate in those cases where esthetics demand a close tissue colour match and where the papillae are large and have shallow gingival grooves. Gingival recession (GR) causing root exposure,^[1-3] and problems such as root caries,^[4-8] dental hypersensitivity,^[9-11] is serious clinical issue warranting a well-planned treatment plan. Hence, a careful assessment of various factors should be done prior treatment. Reported here is a case of single tooth recession successfully treated using conventional double papilla flap technique with a 13-month follow-up.

Case report:

A 25-year-old non-smoking male patient with no contributing systemic history complained about recessed gums in lower back tooth region of the jaw for 6 months. On thorough history taking, and clinical and radiographic examination, the recession was found to be due to faulty brushing and there was no interdental soft tissue loss, malposition, and interproximal bone loss concerning 34. It was Class II recession according to Miller (1985), Category IV according to Sullivan and Atkins (1968) and visual recession according to Liu and Solt (1980) [Figure 1]. Traumatic occlusion was ruled out.

Scaling and root planning (SRP) were performed using Piezoelectric ultrasonic scaler and site-specific Gracey curettes respectively. The corrected brushing technique was demonstrated and the patient was advised to practice the same. The patient was reviewed after a week. Because of sufficient length and width of interdental papilla on both sides of the gingival recession, double papilla flap was selected for root coverage.



Figure 1:- Pre-operative view showing Miller's Class II gingival recession [A] Recession depth 4x4mm [B, C]

Surgical procedure:

Following administration of local anaesthesia with 2% Lignocaine, two horizontal incisions were made on both sides, parallel to the cemento-enamel junction of the tooth to be treated with a no. 15 blade [Figure 2]. Vertical incisions were made on the mesial and distal aspects of the surgical site and placed at the line angles of the teeth after "V" shaped excision of marginal gingiva. The releasing incision was extended into alveolar mucosa without making contact with the bone. A partial-thickness pedicle flap with sufficient mesial and distal interdental papilla was prepared by giving scalloped internal bevel incision with a no. 15 blade [Figure 3]. Interdental papilla was undermined while lifting the papilla gently with the side of the blade and separated from the underlying connective tissue. It was made sure that mesial and distal papilla flaps were wider than the recipient site to cover the root and to provide a margin for attachment to the connective tissue.

Suturing technique:

Both the flaps were rotated towards the centre of the root surface and sutured after ensuring complete coverage of denuded root surface. Interrupted 4-0 vicryl sutures were placed first to approximate the flaps and later to stabilize them with a transverse suture. [Figure 4]

Figure 2:- Incision outline – Horizontal incision at the level of CEJ; Vertical incisions along the line angles.

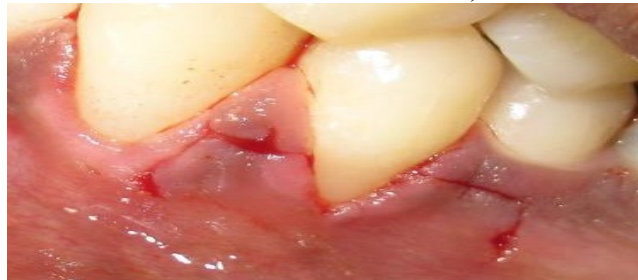




Figure 3:- Partial thickness flap elevation.



Figure 4:- Placement of resorbable sutures.

Firm and gentle pressure were applied to the flap for 2-3 min with cotton-free gauze moistened with sterile saline solution to further secure a successful connection. To protect the surgical area during the initial phase of healing, the periodontal dressing was given which protected the flap from displacement. The tin foil was placed under the dressing to avoid its impingement under the flap [Figure 5]. The patient was advised not to brush the treated site for 4 weeks and instead 0.2% chlorhexidine rinse was prescribed for 4 weeks. Postoperatively, analgesics were prescribed as required. Seven days after the surgery, the periodontal dressing was removed.

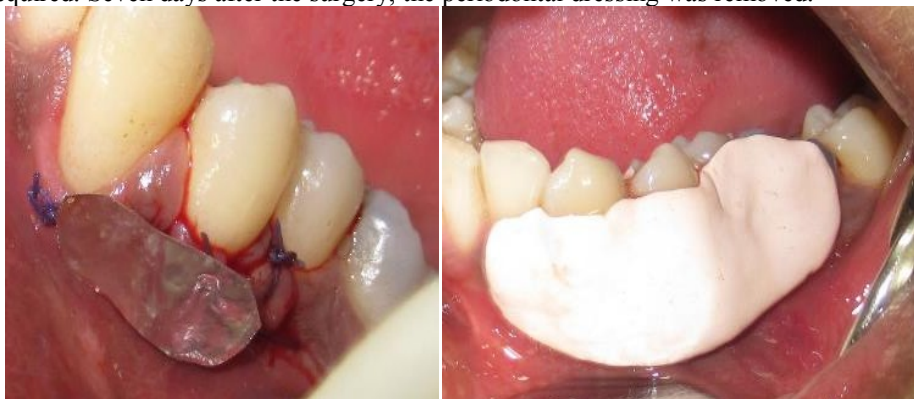


Figure 5:- Placement of tin foil and periodontal dressing.

The patient was examined at 1st and 6th weeks to assess healing and then followed up for 1 year to reassess clinical parameters postoperatively [Figure 6] and [Figure 7].



Figure 6:- Postoperative view at 1st week and 6th week.



Figure 7:-13months follow up

The procedure used in this case produced significant improvement in the clinical parameters and was effective in obtaining root coverage. Root coverage of 3 mm and the increased width of attached gingiva up to 2 mm were observed when compared to baseline measurements [Table 1]

Table 1:- Timeline comparing recession depth at various follow up.

Time period	Recession depth
Baseline	4mm
45 days	1mm
1 year	1mm

Discussion:-

This case report presents a double papillae pedicle graft surgical technique for the treatment of isolated or single tooth marginal tissue recession. Double papillae pedicle graft has shown excellent root coverage if the indications of this technique are followed.

Rubelman modified the existing technique in 1977. He advocated making the initial V incision so that one side had an external bevel and the other an internal one. The flap edges then overlap when sutured together. Rubelman began suturing at the apical aspect of the graft as did Cohen but used a continuous locking suture rather than the interrupted ties recommended by Cohen. As a part of the continuous locking suture, he included a sling suture, a connective tissue suture, and an oblique suture. This technique has been used as a replacement to free gingival autografts where the second surgical site is not necessary. Sometimes with free gingival autografts, blood supply and graft stability may be jeopardized unlike pedicle grafts^[14].

The double papilla procedure is technique sensitive but has good results in treating isolated recessions. The advantages of this technique include excellent color matching, good vascular supply, root coverage, and decrease in hypersensitivity^[14]. The greatest advantage of this procedure is that there is no need for an additional donor site^[15]. Few factors have to be considered when opting for this technique.

1. The interdental papilla should be thick next to recession
2. There should be an absolutely healthy periodontium adjacent to the recession to be treated
3. This technique cannot be practiced to treat multiple adjacent recessions

Conclusion:-

In the past decades, several surgical procedures have been proposed for treating gingival recession. However, the choice of mucogingival surgical technique to treat a recession defect depends on the clinician's skill and the type of recession. The present case report demonstrates a predictable procedure for root coverage of isolated Class II Miller recession defects using Double Papilla flap.

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