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Case Report

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## Root Coverage using Double Papilla Preservation Flap: 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. Esthetics is one of the main concerns of the patient if recession is present especially in anteriors. Hence, the treatment of choice for root coverage for the anterior teeth should address the biological as well as the patient's aesthetic demands. Numerous surgical procedures have been implicated for root coverage. Aesthetic results from using pedicle grafting procedure are superior to the use of free gingival grafts. The 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 combines the esthetic results of pedicle graft with the predictability and usefulness of free gingival graft and is an effective and predictable method of obtaining esthetic root coverage.

**Key Words:** Double papilla technique, esthetics, recession, root coverage

### Introduction

Gingival recession is defined as the location of the gingival margin apical to the cemento-enamel junction.<sup>1</sup> Most important factors causing gingival recession are periodontal disease and improper oral hygiene measures along with other predisposing factors such as thin gingiva, a prominent root surface, labially positioned teeth, frenum pull, and bone dehiscence.<sup>2</sup> Recession of the gingival margin results in an impaired esthetic appearance and sometimes dental hypersensitivity. Gingival recessions are treated to increase the attached gingival width and in some cases for esthetics.

Various techniques are described to achieve root coverage. The procedures to treat the recession are classified into pedicle soft tissue grafts or free soft tissue grafts.<sup>3</sup>

Pedicle graft procedures, depending on their direction of transfer may be grouped as: (i) rotational flaps (such as lateral sliding flaps or papilla flaps) or (ii) advanced flaps with or without rotation or lateral movement.<sup>4</sup>

Two important factors which influence the root coverage outcome include (i) height of the interdental bone and (ii) interdental soft tissue adjacent to the defect. The depth and width of the defect and the amount of avascular tooth surface in contact with a graft during initial healing period will also affect the outcome.

The double papilla technique is opted to treat Miller's Class 1 recession in this case report.

### Case Report

A male patient aged 31 years came to the dental office with Miller's Class I recession in relation to buccal aspect of 24. Patient was in good health and had not received any periodontal therapy previously. On intraoral examination, the recession was 2 mm in length and 2 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.

### Surgical technique

Local anesthesia with 2% lidocaine (2% lignox, 1:80,000) was administered, and two horizontal incisions were made



**Figure 1:** Pre-operative incisions given.

on the interdental papilla, parallel to the cemento-enamel junction of the tooth to be treated with no. 15 blade. Two releasing incisions were made obliquely at the line angles of the adjacent teeth, and these incisions were extended beyond the mucogingival junction (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 hydrochloride (250 mg, pH 1.8) for 5 min (Figure 4). De-epithelialization of the flap was done and rotated to cover tetracycline treated root surface.

The other pedicle flap which was un-deepithelialized was kept in position to cover the previous flap. Interrupted suturing (5-0 vicryl) was done across the medial area of the two papilla flaps (Figure 5). Surgical site was protected with tin foil (Figure 6), and periodontal dressing was given with coe-pack. The patient was advised to refrain from brushing at the grafted site for 3 weeks. The patient was instructed to rinse with 0.2% of chlorhexidine mouthwash twice daily for 3 weeks. Antibiotic (amoxicillin 500 mg, 3 times a day for 5 days) and analgesic (acecloren-p [aceclofenac 100 mg and

paracetamol 500 mg] 3 times a day for 5 days) was prescribed. The patient was reviewed after a week, 2 weeks, and after a month. Complete root coverage was observed at 3 months follow-up (Figure 7).

**Discussion**

Complete coverage of the root is the main objective to be achieved when treating gingival recession in patients who have



Figure 4: Root conditioning done with tetracycline.



Figure 2: Oblique releasing.



Figure 5: Sutures placed.



Figure 3: Partial thickness flap elevated.



Figure 6: Tin foil placed.



**Figure 7:** 3 months post-operative.

esthetics as their priority. Different surgical techniques are practiced for root coverage which include lateral pedicle flaps, coronally advanced flaps, free gingival grafts, free connective tissue grafts, etc.

The double papilla procedure is technique sensitive but has good results in treating isolated recessions. The partial thickness double papilla pedicle graft technique was first proposed by Cohen and Ross.<sup>5</sup> Hall stated that double pedicle graft had “very low predictability in most practitioners’ hands.”<sup>6</sup> The 1989 World Workshop in clinical Periodontics concluded “the double papilla pedicle has very limited usefulness.”<sup>7</sup> 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.<sup>8</sup> 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.<sup>9</sup>

The advantages of this technique include excellent color matching, good vascular supply, root coverage, and decrease in hypersensitivity.<sup>10</sup> The greatest advantage of this procedure is that there is no need for an additional donor site.<sup>11</sup> 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 double papilla technique had demonstrated good esthetic results in this case report.

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