International Journal of Dental Sciences
www.dentaljournal.in
E-ISSN: 2663-4708, P-ISSN: 2663-4694
Received: 06-09-2025; Accepted: 06-10-2025; Published: 21-10-2025
Volume 7, Issue 4, 2025, Page No. 74-76

Management of gingival recession in upper premolar using double papilla flap technique: A case report

Dr. Jyoti Yadav MDS[1], Dr. Geetanjali Sharma MDS[1], Dr. Nishi Tanwar MDS[2]
[1] MDS, Department of Periodontology, Post Graduate Institute of Dental Sciences, PGIDS, Rohtak, Haryana, India
[2] Professor, Department of Periodontology, Post Graduate Institute of Dental Sciences, PGIDS, Rohtak, Haryana, India

Abstract
Gingival recession is a common mucogingival problem characterized by the apical displacement of the gingival margin, leading to root exposure. Various surgical techniques have been developed to achieve predictable root coverage. The double papilla flap technique, introduced to utilize adjacent interdental tissues for coverage, is particularly useful in localized recession defects. This case report presents the successful management of Miller's Class I gingival recession in the maxillary first premolar region using the double papilla flap technique. The postoperative results were satisfactory with significant root coverage, good color blend, and healthy gingival contour. The technique proved to be minimally invasive, effective, and esthetically pleasing.

Keywords: Gingival recession, Double papilla flap, Root coverage, Periodontal plastic surgery

Introduction

Gingival recession is defined as the apical migration of the gingival margin from its normal position at the cementoenamel junction (CEJ), leading to root exposure, hypersensitivity, and esthetic concerns [1]. The condition is multifactorial, commonly associated with traumatic tooth brushing, periodontal disease, malpositioned teeth, frenal attachment, and iatrogenic factors such as faulty restorations [2, 3]. Although the prevalence of recession increases with age, it can occur even in younger individuals with otherwise healthy periodontium [4].

Miller's classification [5] remains widely used to describe the extent of recession and to predict the success of surgical root coverage. Several mucogingival procedures have been developed, including pedicle flaps, free gingival grafts, subepithelial connective tissue grafts, and coronally advanced flaps [6–8]. The goals of these techniques are to achieve predictable root coverage, improve esthetics, and enhance patient comfort.

The double papilla flap technique, first described by Cohen and Ross in 1968 [9], is particularly indicated for narrow isolated gingival recession defects with adequate interdental papillae. The technique utilizes tissue from adjacent papillae, sutured together to cover the denuded root surface. This method maintains dual blood supply, avoids a secondary donor site, and provides excellent color match and esthetic outcome [10,11].

The present case report describes the management of a localized Miller's Class I gingival recession in the maxillary premolar region using the double papilla flap technique, which resulted in satisfactory root coverage and improved esthetics.

Case Report: A 35-year-old male patient reported to the Department of Periodontics with a chief complaint of tooth sensitivity and receding gums in the upper right second premolar for the past six months. The patient was systemically healthy and had satisfactory oral hygiene. Gingival recession was noted on tooth 15 (maxillary right second premolar), classified as Miller's Class 1 defect. The recession depth was 5 mm and width were 3mm, with adequate width and thickness of keratinized tissue (Fig.-A, B). There was no interdental bone loss or soft tissue loss. After thorough phase I therapy (scaling and root planing) and oral hygiene instructions, a surgical procedure using the double papilla flap technique was planned for root coverage. Under local anesthesia, the exposed root surface was planed. Two vertical incisions were made extending from the adjacent papillae towards the defect, creating two pedicle flaps (Fig.-C). The papillae were gently dissected and rotated over the denuded root surface to meet at the midline. The flaps were sutured together using 5-0 resorbable sutures, ensuring complete coverage of the recession area (Fig.-D). The patient was advised to avoid mechanical brushing at the surgical site for two weeks and to use chlorhexidine mouthwash twice daily. Sutures were removed after 10 days (Fig.-E). At the 1-month follow-up, the surgical site showed good healing with complete root coverage and harmonious gingival contour (Fig.-F). At 3 months, the gingiva remained healthy and firm with no recurrence of recession (Fig.-G). The patient reported relief from sensitivity and satisfaction with esthetics.

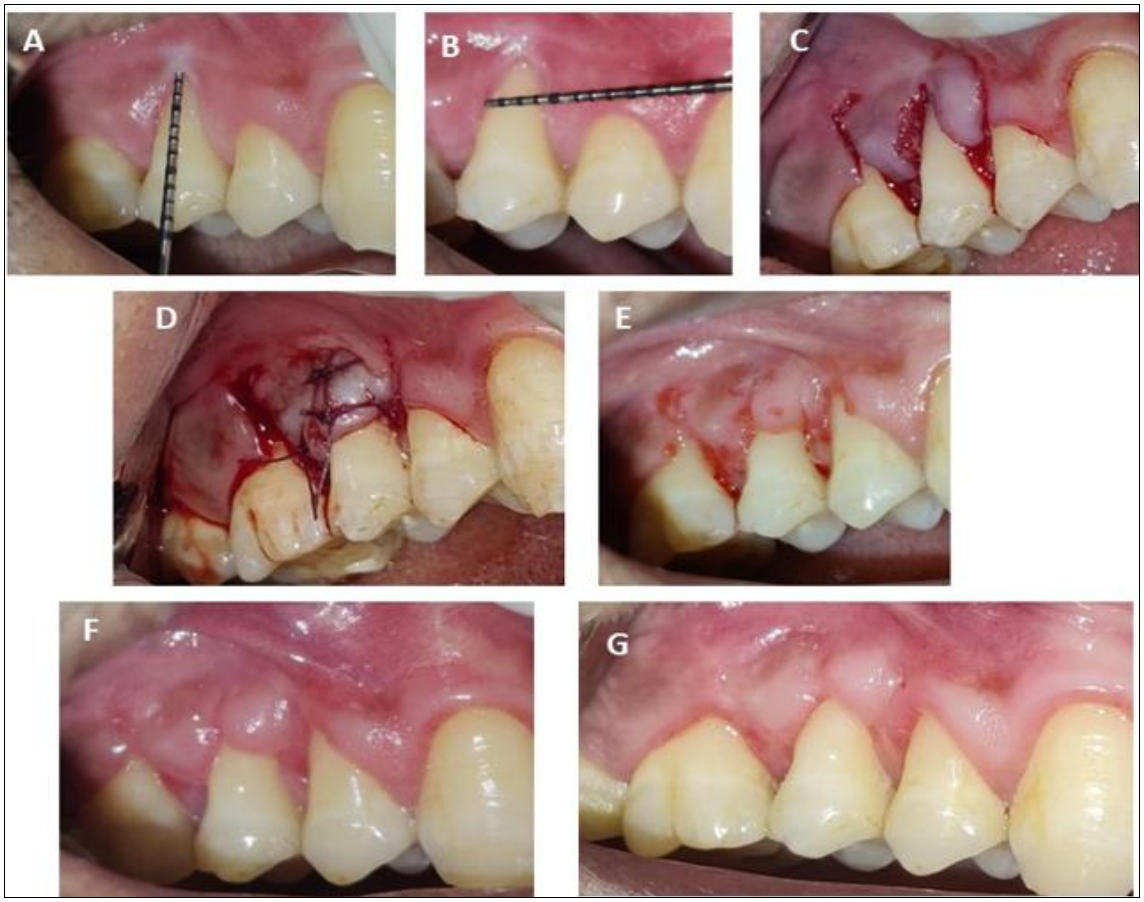

Figure: A,B) Pre-operative photo, C) Post incision, D) Post suturing, E) 10 days follow-up, F) 1 month follow-up, G) 3 months follow-up.

Discussion: The management of gingival recession remains one of the most challenging aspects of periodontal plastic surgery. The ideal technique should provide predictable root coverage, good esthetic blending, and long-term stability. The double papilla flap technique fulfills these objectives, particularly in cases of isolated, narrow recession defects with sufficient interdental papillae and keratinized tissue [12]. The principle behind this approach is to achieve root coverage using locally available tissue without the need for a secondary donor site, thereby minimizing postoperative morbidity and improving patient comfort [13]. The double papilla flap maintains a dual blood supply—one from the pedicle base and another from the underlying connective tissue bed—which enhances flap survival and healing [14]. According to Harris [15], procedures that preserve multiple sources of vascularity demonstrate more predictable outcomes compared to free grafts, especially in esthetically sensitive areas.

Clinical studies have reported favourable outcomes with the double papilla flap technique. Holbrook and Ochsenbein [16] observed that the technique yields excellent tissue color matching and minimal scarring, making it particularly useful in the maxillary anterior and premolar regions. Similarly, Guinard and Caffesse [17] demonstrated that double papilla flaps achieved complete root coverage in most Miller's Class I and II defects when meticulous flap adaptation was maintained.

Another factor influencing treatment success is the thickness of the flap and the adequacy of root preparation. Pini Prato *et al*. [18] emphasized that flap thickness greater than 0.8 mm significantly increases the likelihood of complete root coverage. Root surface biomodification using agents such as tetracycline or EDTA has also been reported to promote connective tissue attachment and enhance healing [19].

Although newer techniques, such as the subepithelial connective tissue graft and coronally advanced flap, are widely used, the double papilla flap remains advantageous in certain clinical situations. It is especially suitable when the recession is narrow, adjacent papillae are intact, and esthetic demands are moderate [20]. Long-term stability of the results depends on maintaining plaque control and avoiding traumatic brushing habits, which are major etiological contributors to recurrence [21].

In the present case, the use of a double papilla flap for the management of a localized Miller's Class I defect resulted in complete root coverage and excellent esthetic integration. These findings are consistent with previous studies that have reported high predictability, minimal postoperative complications, and satisfactory patient outcomes with this approach [22]

Conclusion: The double papilla flap technique is a reliable and conservative surgical option for managing localized gingival recession defects. By utilizing adjacent papillary tissue, it ensures adequate vascularity, rapid healing, and excellent esthetic integration without the need for a secondary donor site. In the present case, the procedure provided complete root coverage and favorable soft tissue contour, demonstrating its predictability and patient acceptability. Proper case selection, precise flap adaptation, and maintenance of good oral hygiene are essential for long-term stability. Hence, the double papilla flap remains a

valuable technique in periodontal plastic surgery, particularly for narrow, isolated recession defects with adequate interdental support.

Acknowledgment
The authors would like to acknowledge the Department of Periodontology, PGIDS, Rohtak, for their support and cooperation.

Conflict of Interest
The authors declare no conflicts of interest related to this study.

References

1. Löe H, Anerud A, Boysen H, Smith M. The natural history of periodontal disease in man. Journal of Periodontology,1992:63(9):489–495.
2. Tugnait A, Clerehugh V. Gingival recession—its significance and management. Journal of Dentistry,2001:29(6):381–394.
3. Zucchelli G, De Sanctis M. Treatment of multiple recession-type defects in patients with esthetic demands. Journal of Periodontology,2000:71(9):1506–1514.
4. Albandar JM, Kingman A. Gingival recession, gingival bleeding, and dental calculus in adults 30 years of age and older in the United States, 1988–1994. Journal of Periodontology,1999:70(1):30–43.
5. Miller PD Jr. A classification of marginal tissue recession. International Journal of Periodontics and Restorative Dentistry,1985:5(2):8–13.
6. Wennström JL. Mucogingival therapy. Annals of Periodontology,1996:1(1):671–701.
7. Nelson SW. The subpedicle connective tissue graft: A bilaminar reconstructive procedure for the coverage of denuded root surfaces. Journal of Periodontology,1987:58(2):95–102.
8. Allen AL, Miller PD Jr. Coronal positioning of existing gingiva: short-term results in the treatment of shallow marginal tissue recession. Journal of Periodontology,1989:60(6):316–319.
9. Cohen DW, Ross SE. The double papillae flap in periodontal therapy. Journal of Periodontology,1968:39(2):65–70.
10. Pini Prato GP, Baldi C, Nieri M, *et al*. Coronally advanced flap: The post-surgical position of the gingival margin is an important factor for achieving complete root coverage. Journal of Periodontology,1999:70(7):711–722.
11. Wennström JL, Zucchelli G. Increased gingival dimensions: a significant factor for successful outcome of root coverage procedures? Journal of Clinical Periodontology,1996:23(8):770–777.
12. Borghetti A, Glise JM, Monnet-Corti V, Dejou J. Comparative clinical study of two surgical techniques for treating gingival recessions. Journal of Periodontology,1999:70(3):327–332.
13. Langer B, Langer L. Subepithelial connective tissue graft technique for root coverage. Journal of Periodontology,1985:56(12):715–720.
14. Harris RJ. Root coverage with a connective tissue with partial-thickness double pedicle graft: a predictable method. Journal of Periodontology,1992:63(5):477–486.
15. Harris RJ. Predictability of root coverage using a combination of double pedicle and connective tissue graft: 50 consecutive cases. Journal of Periodontology,1994:65(9):857–863.
16. Holbrook T, Ochsenbein C. Complete coverage of the denuded root surface with a one-stage gingival graft. International Journal of Periodontics and Restorative Dentistry,1983:3(3):8–27.
17. Guinard EA, Caffesse RG. Treatment of localized gingival recessions. Part I. Lateral sliding flap. Journal of Periodontology,1978:49(7):351–356.
18. Pini Prato GP, Baldi C, Nieri M, *et al*. Coronally advanced flap: The influence of flap thickness on root coverage. Journal of Periodontology,2005:76(3):418–426.
19. Polson AM, Proye MP. Effect of root surface alterations on periodontal healing: I. Surgical denudation. Journal of Clinical Periodontology,1982:9(1):66–77.
20. Cairo F, Pagliaro U, Nieri M. Treatment of gingival recession with coronally advanced flap procedures: A systematic review. Journal of Clinical Periodontology,2008:35(8 Suppl):136–162.
21. Serino G, Wennström JL, Lindhe J, Eneroth L. The prevalence and distribution of gingival recession in subjects with a high standard of oral hygiene. Journal of Clinical Periodontology,1994:21(1):57–63.
22. Chambrone L, Tatakis DN. Long-term outcomes of root coverage procedures: A systematic review. Journal of Periodontology,2015:86(1):87–107.