TPM Vol. 32, No. S5, 2025
ISSN: 1972-6325
https://www.tpmap.org/

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LATERALLY REPOSITIONED FLAP-A CASE SERIES

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ABSTRACT:

Background: An apical migration of the gingival edge from its normal level causes pathological exposure of root surfaces, which is referred to as "gingival recession". Mucogingival esthetic alterations are done by mucogingival surgeries. The Mucogingival problems are caused by altered passive eruption, root caries, or gingival recession involving a non-carious cervical lesion.Root coverage procedures like free gingival autografts, pedicle graft and connective tissue grafts are extensively used.

Methods: This surgical procedure was done according to Grupe and Warren protocol for a Miller's Class I recession. The donor and recipient site was prepared for optimal visualization and the pedicle flap was sewn with 4-0 silk sutures to the recipient location.

Results: At one week, there was low postoperative morbidity, gradual surgical healing, and barely perceptible discomfort.6 month post operative healing revelaed that there was a gain of 2-3mm of gingival tissue.

Conclusion: A vital tool in plastic surgery, the lateral relocated flap procedure offers several advantages in terms of boosting appearance and regaining function. Due to its ability to preserve the tissue's vascular supply, versatility in application, improved cosmetic results, and reduced donor site morbidity, this method has grown in favour among both patients and surgeons. As plastic surgery advances, the lateral relocated flap technique continues to be a helpful tool for achieving the greatest outcomes and patient satisfaction.

Keywords Root coverage, gingival recession, and lateral pedicle grafting

INTRODUCTION:

Friedman[1] coined the term "mucigingival surgery" to refer to the surgical techniques used to address three distinct issues in the connection between the gingiva and the oral mucous membrane.

1. 1 connected to the gingiva that is attached
2. Linked to a shallow vestibule
3. Associated with frenum obstructing the gingiva at the edge.

Mucogingival surgery was reclassified as periodontal plastic surgery by World Workshop in 1996. A surgical method used to treat or eradicate anatomical developmental traumatic abnormalities of the Periodontal plastic surgery is the surgical treatment of gingiva or alveolar mucosa.

There are several methods for growing gingiva that is connected.

• Increased gingival tissue proximal to the recession site

Gratuitous gingival autograft

flap positioned apically
• Coronal gingival augmentation to the recession Gingival autografts for free Free autografts of connective tissue
• Autograft of the podicle, positioned laterally, positioned coronally
• Graft of subepithelial connective tissue
• Directed tissue repair
•The pouch and tunnel method

LRP:

Lateral displaced pedicle flap was first described by Grupe and Warren in 1956[2] which was indicated in the region to cover denuded root surfaces and isolated gingiva apical migration where there is enough donor tissue present close to the recipient site. When sufficient soft tissue and underlying bone are existing at the location of the donor tooth for a single, isolated root covering, the prognosis of lateral sliding flap surgery is favourable..[3] It is performed in areas with narrow mesiodistal width, with sufficient tissues at recession site and coverage required to one or two teeth.It is difficult to perform in areas with minimal keratinized tissue at donor site ,deep interproximal pockets and narrow vestibule .This The pedicle flap has strong vascularity thanks to the surgery. There is a chance of occurrence of dehiscence or fenestrations at the donor site.

CASE REPORT:

CASE:1

A 36-year-old man presented himself to the outpatient department of periodontics and implantology, citing minor hypersensitivity and receding gums in the area of his lower front teeth as his main complaints over the previous three months. The patient has never had any prior dental or medical experience. Examining 41 produced Miller's Class I recession (Figure 1a) and a shallow vestibule (Figure 1b). Before beginning the surgical operation, the patient's informed permission was obtained.

Clinical data were measured at baseline, including the width of connected gingiva and the pocket probing depth (PPD).. Visual method was used to locate the mucogingival intersection. William's Periodontal Probe was used to measure the pocket depth by distance from gingival margin to the sulcus base (Fig-1c).

PRESURGICAL PROTOCOL:

Treatment planning was done. Phase I provided advice for mouth hygiene after scaling and root planing. After two weeks, the patient was called back to assess
the gingival health and dental hygiene and in surgical phase, vestibuloplasty was done(Fig-1d,e) and Coe pak is placed as a protective barrier(Fig-1f).Patient reviewed after a week to carry out the LRP pocedure.

SURGICAL PROCEDURE:

The procedure was performed based on Grupe and Warren protocol,1965. First, a 1:2,000,000 epinephrine and 2% lignocaine hydrochloride local anesthetic was given.

To create a recipient site using a No. 15 blade, de-epithelization of the gingival edge encircling the exposed root is carried out as a bed for the transferred tissue.

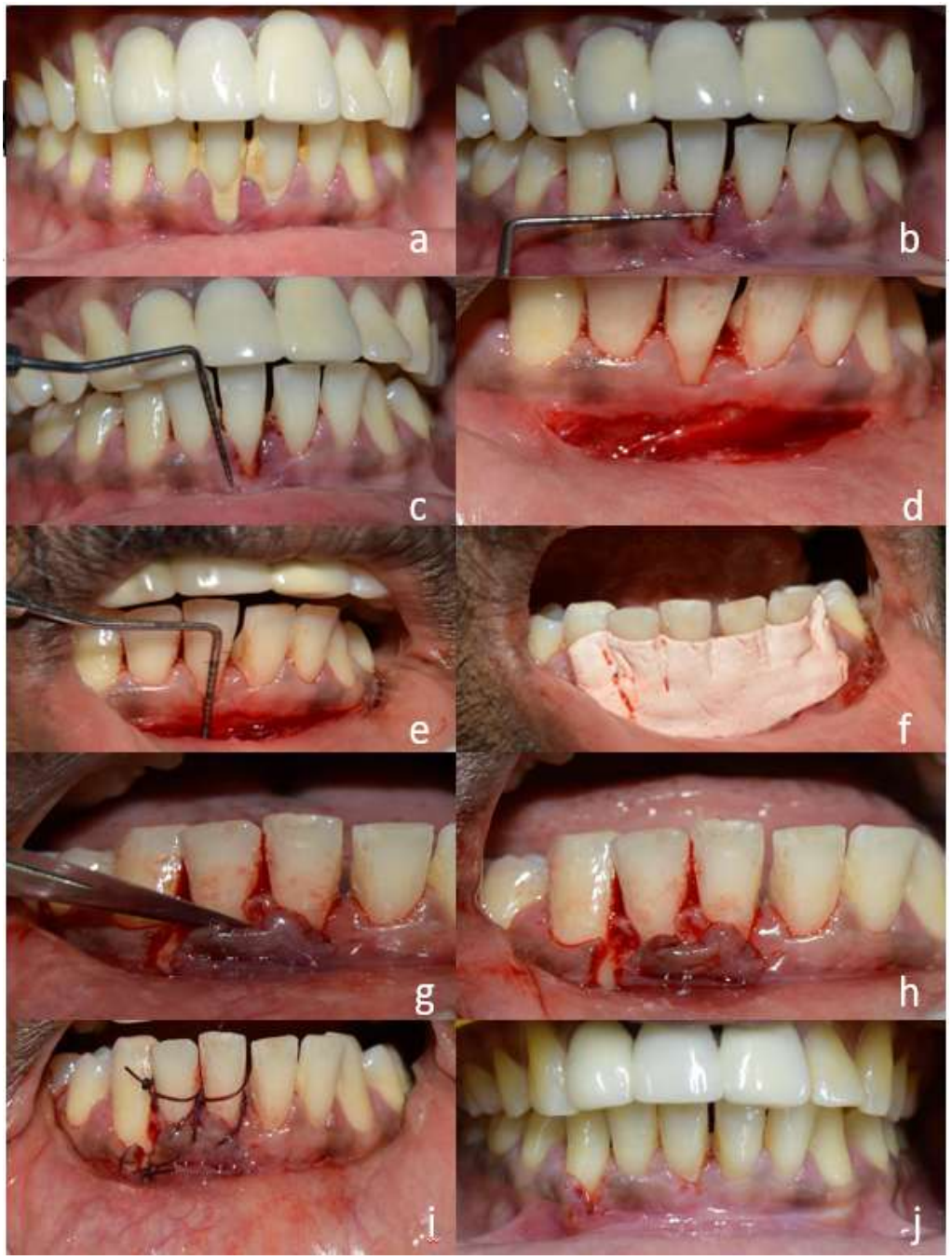
PREPARATION OF DONOR SITE:

The donor flap ought to be three to four times longer and at least half as big as the recipient area that needs to be covered. At the donor site, a vertical incision is created using a no. 15 scalpel blade.(Fig. 1g) It is inserted deeply apically into the mucosal tissue to allow the flap to move about as needed. (Fig. 1h)Adequate vascularity requires a large base for the flap. A no. 15 blade is used to make a circular incision that runs from the V-shaped incision to the vertical incision. The flap is very carefully dissected, keeping each interproximal papilla intact.

PREPARATION OF PEDICLE FLAP:

A blunt dissection of the flap was given to raise a full thickness pedicle and should be unrestricted enough to allow unrestricted movement to the receiving site. When trying to position the pedicle flap over the recipient site, if any stress is felt,
a cut back or releasing incision is made to release the tension. The pedicle flap is placed coronally on the recipient tooth's enamel between 1 and 2 millimetres high, or as high as the interproximal tissue will allow. The sutures were placed by 4-0 silk sutures [Fig-1i].Patient was reviewed after two weeks and sutures were removed.(Fig-1j)

FIGURE: 1



CASE: 2

A 30 years old male patient reported to the outpatient Department of Periodontics and implantology with the major complaint of minor hypersensitivity and lowering of gums in his lower front tooth region for past 3 months. The patient has never had any prior dental or medical experience. Examining 31 produced Miller's Class I recession (Figure 2a). Before beginning the surgical operation, the patient's informed permission was obtained.

Clinical data were measured at baseline, including the width of the connected gingiva and the pocket probing depth (PPD). Visual method was used to locate the mucogingival junction. Using William's Periodontal Probe, the distance between the gingival margin and the sulcus base was used to measure the pocket depth.

PRESURGICAL PROTOCOL:

Treatment planning was done. Phase I therapy included scaling and root planning(Fig-2b) some guidelines for good oral hygiene. After two weeks, the patient was summoned back to evaluate their gingival health and oral hygiene. During the surgical phase, the LPG treatment was performed.

SURGICAL PROCEDURE:

The procedure was performed based on Grupe and Warren protocol,1965. Firstly, Local anesthesia using 2% lignocaine hydrochloride with 1:2,00,000 epinephrine was administered. To create a recipient bed for the relocated tissue, the gingival margin around the exposed root is de-epithelized using a 15-blade dental instrument. In order to obtain a flat surface, the incised edge was curetted to eliminate the granulation tissue there.

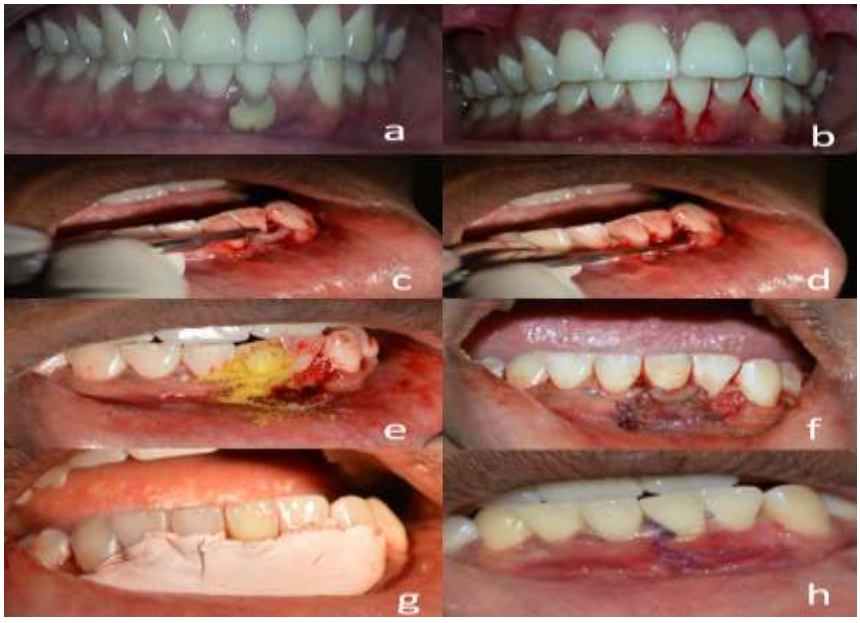
PREPARATION OF DONOR SITE:

The donor flap ought to be three to four times longer and at least half as big as the recipient area that needs to be covered. At the donor site, a vertical incision is created using a no. 15 scalpel blade (Fig. 2c,d) It penetrates the mucosal tissue sufficiently deep apically to for the flap to move freely. For optimal vascularity, a substantial base for the flap is required. Using a No. 15 blade, a sulcular incision is made that extends from the V-shaped incision to the vertical incision. The flap is forcefully separated, but the interproximal papilla are carefully preserved.

PREPARATION OF PEDICLE FLAP:

The flap was dissected bluntly to raise a full thickness pedicle, which should be tension-free and free to travel to the recipient location. A cut back or releasing incision is made to reduce tension if it is felt when trying to position the pedicle flap over the recipient site.The pedicle flap is positioned coronally on the enamel of the receiving tooth between 1 and 2 millimetres high, or as high as the interproximal tissue will allow.. Tetracycline was placed in the site.(Fig-2e).The sutures were placed by 4-0 silk sutures(Fig-2f).The periodontal pack was placed as a protective barrier.(Fig-2h). Patient was reviewed after 2 weeks.(Fig-2f)

FIGURE: 2



POSTOPERATIVE CARE:

Regarding the post-operative care of the surgical site, Instructions were given to the patient.The patient was told to use mouthwash containing 0.12% chlorhexidine gluconate twice a day and not to brush the surgical site. Additionally, the patient was administered an antibiotic and analgesic regimen (Amoxicillin 500 mg twice daily for five days in a row and Aceclofenac 100 mg three days in a row). After ten days, the sutures were taken out, and a surgical site examination revealed that the root surface was completely covered (Fig.). The patient received instructions on how to take care of the surgical site after the procedure.

DISCUSSION:

Gingival recession causes root caries, discomfort, sensitivity, and poor aesthetics. Gingival recession problems have been treated surgically using a variety of procedures. They consist of techniques for covering the roots, which broaden the keratinized tissue4. Root covering techniques are an essential therapeutic option for gingival recession.[5] It is dependent on variables such as removing etiological factors, the degree of interproximal bone, and the root coverage approach used in accordance with the clinical scenario.

Because the neighboring tooth in this case has a healthy periodontal state, enough keratinized gingiva, and normal bone height, we decided to apply the lateral pedicle graft procedure. Since lateral pedicle grafting requires only one surgical site and no additional donor site, it is a more advantageous approach than root covering. The disadvantage of lateral pedicle grafting is the possibility of gingival recession and bone loss at the donor site.

Guinard and Caffesse[6] conducted a study in wherein the neighboring donor site experiences an average of 1 mm of post-operative gingival recession .Therefore, where the width and thickness of the donor tissue's keratinized gingival are insufficient, lateral pedicle grafting is contraindicated.

Grupe and Warren[7] developed the modification methods to avoid donor site gingival recession. **Staffileno**[8] stated that the use of partial thickness flap avoids the recession at donor site.

In a study, Grupe [9] revealed a modified method that involved creating a submarginal incision at the donor location in order to retain the marginal gingival.

Pteifer Js [10] et al demonstrated the method of full and partial thickness pedicle flap.

With the use of a human histology analysis**, Sugarman** proved that a flap positioned laterally caused a new connective tissue attachment.[11]

Common and McFall[12] Using human histology, McFall found that LPF in conjunction with citric acid conditioning produced new collagen and cementum fibers orientated parallel to the root.

Full thickness pedicle flaps are made to cover the root surface, while partial thickness pedicle flaps are prepared to cover the root surface, as demonstrated by **Ruben et al**..[13]

The postoperative depth of recession, root coverage, and clinical attachment levels all significantly improve with the use of EDTA, according to a 2000 study by **Moawia M. Kassab et al.14**

Knowles and Ramfjord used a free autogenously gingival grafts to cover the donor site[15]

CONCLUSION:

The lateral relocated flap technique has become a crucial tool in plastic surgery, providing several benefits in terms of enhancing the aesthetics and restoring function. This approach has gained popularity among both patients and surgeons due to its capacity to preserve the tissue's vascular supply, diversity in application, enhanced cosmetic results, and less donor site morbidity. The lateral relocated flap technique is still a useful tool for attaining the best results and patient satisfaction as plastic surgery develops.

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