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Lateral Pedicle Graft: Treatment Modality for Isolated Localized Gingival Recession: A Case Report

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ABSTRACT

The term "gingival recession" refers to the pathological exposure of root surfaces caused by the apical movement of the gingival edge from its physiological level. Treatment of mucogingival esthetic changes is the main focus of mucogingival aesthetic surgery. Patients with gingival recession regularly present to dental offices, which may result in discomfort or hypersensitivity, esthetic issues, the retention of plaque and the resulting inflammation of the gingiva, root caries, abrasion, and fear of tooth loss. Both surgical and non-surgical methods can be used to address gingival recession. Frenectomy in cases of high frenal attachment and root covering operations are two examples of surgical ways to widening keratinized tissue. This method was chosen because it had the following benefits: a single surgical site, preservation of the flap's blood supply, and a postoperative hue that blended in with the surrounding tissue.

INTRODUCTION

Surgery for mucogingival changes and restoration is referred as mucogingival esthetic surgery. Gingival recession is the word used to describe when the gingival epithelium shifts apically, exposing the root surface. There are many etiological causes of gingival recession, and the goal of treatment should be to eradicate these causes before restoring root coverage to the denuded surface. In addition to plaque buildup and calculus, recession can also leads to declining aesthetics, root caries, abrasion of the root surfaces, and hypersensitivity.[1]

Gingival recessions can be treated surgically using a variety of techniques, each of which having advantages over others as well as drawbacks.[2]

Surgical techniques recommended for treating gingival recessions:[3] Lateral pedicle graft, Double papilla flap, Oblique rotated flap, Coronally repositioned flap, Semilunar coronally repositioned flap.

The technique chosen to treat gingival recession depends on the clinical characteristics of the recession site and the patient's needs.[4] The soft tissue grafts used in these periodontal plastic operations can be pedicle, free, or a combination of both. Pedicle grafts are essentially the transfer of gingival tissue from the donor site over the denuded root surface where there is sufficient width of connected gingiva.

Grupe and Warren Jr. first introduced the Lateral Pedicle Flap, also known as the Sliding Flap, Laterally Positioned Flap, or Rotated Flap, in 1956.[4] When an isolated recession site has enough donor tissue and vestibular depth lateral to it, a lateral pedicle flap may be employed to cover it.

The current case study demonstrates the application of the lateral pedicle flap technique for the treatment of a single buccal recession defect.

CASE DESCRIPTION

A 25-year-old male patient with a primary complaint of unattractive appearance, sensitivity in the lower front area, and receding gums for the previous 1 year visited department of Periodontics, Post Graduate Institute of Dental Sciences, Rohtak, Haryana. Nothing noteworthy was mentioned in the past dental and medical histories. The intraoral examination revealed no periodontal pockets. Miller's Class II recession was seen on 31 (Figs. 1) although there was no trauma from occlusion.

Figure 1: Preoperative image showing Miller Class II gingival recession.

Patient was brought back for an evaluation 4 weeks following the end of phase I therapy. With the patient's permission, it was agreed to do surgery to address the condition using a lateral (horizontally displaced) flap.

Surgical Method

Site preparation for the recipient: when properly isolated. Local anesthetic 1:80,0000 was applied to the operative site. Using a 15-no. scalpel blade, a V-shaped incision is made along the recipient site's soft tissue margin, removing the surrounding epithelium and connective tissue. Reverse bevel incisions are made on the gingival margin next to the donor site (i.e., the margin close to 31), and external bevels are made on the opposite margin (near 41), removing the epithelium surrounding the denuded root surface(Fig.2). The recipient site for the laterally displaced flap removed from site of 32 was to be the exposed connective tissue next to the distal margin of 31.

Figure 2: Intraoperative image showing preparation of recipient bed.

Preparation of Flap: The donor site's periodontium had a sufficient width of connected gingiva, minimum alveolar bone loss, and no dehiscence or fenestration. A partial thickness flap was raised and a vertical incision was made from the gingival edge to outline a flap next to the recipient site, extending to the level of the recipient site's base, using a 15-no. Scalpel blade.

To cover the denuded root and offer a wide margin for attachment to the connective tissue, the flap was wider than the recipient location. At the distal corner of the flap that was facing the recipient site, an incision was cut back into the alveolar mucosa. (Fig. 3).

Figure 3: Image showing suturing after laterally displacing the flap.

The flap was moved laterally to the neighbouring denuded root , allowing for a suitable and tension-free adaptation. To keep the flap from slipping apically, interrupted sutures were used to secure it (Fig. 4).

Figure 4: Postoperative image showing successful healing at 1month.

A periodontal pack was placed over the surgical site. After a week, the patient was called back for pack and suture removal.

Patients were given prescriptions for medications to prevent infection-related problems.

Amoxycillin 500 mg was administered three times daily for five days, along with analgesics (Ibuprofen) three times daily for three days, 0.2% Chlorhexidine di gluconate mouthwash twice daily for two weeks, and a warning not to vigorously scrub the surgical site.

After a week, the patient was summoned back for follow-up.The site was irrigated with regular saline and Betadine once the pack and sutures were removed. The healing went well. One, three and sixmonths follow ups were allotted for the recall. The result of the recession covering revealed morphologic and chromatic similarity to the surrounding gingiva. As a result, patient satisfaction was felt.

RESULTS

Clinical measurement was compared prior to and following surgery. Denuded root was covered with firm attachment post operatively and recurrence was not reported till 6 months follow up(Fig.5). Results were stable and maintained.

Figure 5: Postoperative image showing stable results at follow up of 6 months.

DISCUSSION

Over years, several techniques are used to obtain root coverage. Indications for lateral pedicle flap are sufficient length, width and thickness of keratinized tissue, recession limited to 1-2 teeth, adequate depth of vestibule and narrow recession. Contraindications are insufficient length width and thickness of keratinized tissue presence of fenestration or dehiscence at donor site, exceptionally protrusive teeth deep periodontal pockets loss of interdental bone and inadequate depth of vestibule.[6] Advantage of this technique over other is morphologic and chromatic resemblance its simplicity, presence of single surgical site and good vascularity of pedicle that facilitate uptake of graft.[5] Disadvantages include probable recession, dehiscence or fenestration at donor site and its limitation to only one or two teeth.

A full thickness pedicle flap is prepared to cover the root surface, and a partial thickness flap is prepared close to the donor site to protect the exposed root surface and prevent bone loss by preserving periosteum. Ruben et al. demonstrated this technique in 1976.[7] We used this procedure in our instances as well, and it produced successful outcomes without any tissue loss at the donor site. The patientwas also pleased with the surgical results.

Numerous researchers assessed this method (McFall 1967, 6 Smukler 1976, 7), and it was discovered that success rates for the root covering approach ranged from 69% to 72%.

Tension at the base of the distal incision, an inability to cover the denuded root surface with a pedicle full thickness flap, and inadequate stabilization and mobility of the graft are all potential reasons for failure.[6]

CONCLUSION

One of the most common aesthetic complaints among patients is gingival recession. Additionally, it can make the patients more sensitive and raise their chance of developing root caries. There are numerous techniques available to conceal exposed roots. The casepresented here demonstrate the effectiveness of lateral pedicle grafts as a therapeutic option for the management of teeth with recession flaws in the esthetic zones of the mouth. However, if a favorable outcome is to be obtained, meticulous case selection and surgical management are essential. One of dependable treatment for isolated denuded root surfaces is lateral pedicle grafting.

When compared to other mucogingival procedures like the free gingival transplant, LPG is a straightforward surgical technique..Excellent coverage can be expected for Miller's Class-I and Class-II situations employing lateral pedicle grafts and also color matching with the neighboring tissues in cases of single tooth or isolated gingival recession.

REFERENCES

[1]. Woofer C: The prevalence and etiology of gingival recession, periodontAbstr 17:43, 1969.
[2]. Staffileno H. Management of gingival recession and root exposure problems associated with periodontal disease. Compend Contin Educ Dent 1964; November: 111-120.
[3]. Bahat O, Handelsman M. Periodontal reconstructive flaps classification and surgical considerations. Int. J Periodontics Restorative Dent 1991; 11:481-487
[4]. Zucchelli G, Cesari C, Amore C, Montebugnoli L, De Sanctis M. Laterally moved, coronally advanced flap: A modified surgical approach for isolated recession-typedefects. Journal of Periodontology. 2004 Dec;75(12):1734-41
[5]. Kumar A, Jan SM, Behl R, Nazir R, Khairat RU, Ganaie TA. Laterally positioned flap with periosteal graft for the treatment of gingival recession, novel technique - A pilot study. IAIM. 2016;3(6):192-98.
[6]. Rajkarnikar J. Efficacy of Lateral Pedicle Graft in the Treatment of Isolated Gingival Recession Defects. Int J of Pharmaceutical Science Invention. 2014;3(1):46-50
[7]. Ruben MP, Goldman HA, Jason W. Biological considerations fundamental to successful employment of laterally repositioned pedicle flaps and free autogenous gingival graft in periodontal therapy. In: Stahl SS (ed). Periodontal Surgery. Springfield: CC Thomas, 1976.
[8]. Grupe HE, Warren RF Jr: Repair of gingival defects by a sliding flap operation, J periodontal 27:923, 1956.
[9]. Grupe HE: Modified technique for sliding flap operation. J periodontal 37:491, 1966.