

## Esthetic Root Coverage Of An Isolated Gingival Recession By Lateral Pedicle Graft Technique: A Case Report

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**Abstract: Background:** Gingival recession is the one of the widespread mucogingival deformity and should be treated at its most primitive recognition. Exposed root surfaces are more likely to develop root sensitivity, root caries, cervical abrasions and post esthetic problems. Amid innumerable procedures, laterally positioned pedicle graft (LPG) is extensively used efficaciously to conceal recession defects. The main advantages of the laterally positioned pedicle graft is, it produces excellent esthetic results as it has good vascularity of the flap and ability to cover the denuded surfaces. Thus, the present case report describes the use of lateral pedicle graft technique in an isolated gingival recession on mandibular incisor. [Dholakia P Natl J Integr Res Med, 2022; 13(1): 129-132, Published on 26/01/2022]

**Key Words:** Gingival Recession, Laterally Positioned Pedicle Graft (LPG), Root Coverage

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**Introduction:** Gingival recession is the exposure of root surfaces due to apical shift in the gingival margin. It infers the damage of periodontal connective tissue fibers along with root cementum and alveolar bone. More than 50% of the population has one or more sites of gingival recession  $\geq 1$  mm<sup>1</sup>. Gingival recession may cause the patient to feel esthetic discomfort and dentin hypersensitivity<sup>2</sup>.

The greatest noteworthy factors triggering gingival recession are periodontal disease and improper oral hygiene measures; in consort with some predisposing factors e.g. thin gingiva, a bulging surface of root, dehiscence in alveolar bone, anomalous positioning of tooth, frenal pull, mechanical trauma produced by brushing of teeth, and iatrogenic factors such as defective restorations or unrestrained orthodontic movement of teeth<sup>3</sup>.

However, there are several other factors that may also account for this unpleasant and unesthetic effect like plaque induced gingival inflammation, lack of attached gingiva, malpositioned tooth, shallow vestibule or local iatrogenic factors<sup>4</sup>. In the past few decades, various techniques have been employed with the purpose of achieving the coverage of exposed

root surfaces<sup>5</sup> e.g.: Laterally positioned flaps, Coronally positioned flaps, free gingival grafts, sub epithelial connective tissue grafts, guided tissue regeneration and acellular dermal matrix allograft. The choice of a repositioned flap may lead to improved aesthetic conditions, gingiva rearrangement, reduced root sensitivity, but also may present limitations, such as: shallow vestibule, little attached gingiva and wide recessions, with prominent roots.<sup>6</sup> The main advantages of the laterally positioned pedicle graft are that it is relatively easy and not time-consuming. It produces excellent esthetic results as it has good vascularity of the flap and ability to cover the denuded surfaces.

Thus, this paper objective was to describe a case of esthetic root coverage of an isolated gingival recession on mandibular incisor by employing lateral pedicle graft technique.

**Case Report:** A 33 years old female patient reported to the Outpatient Department of Periodontics, Narsinhbhai Patel Dental College and Hospital with a chief complaint of “long tooth” in the anterior tooth of mandibular arch.

Patient had a no medical history. Extra oral examination didn't report any clinical findings

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and on intraoral examination there was Miller's class I gingival recession in relation to lower right mandibular central incisor (41) measuring 6 mm in height and 3 mm in width [Figure 1, 2].

**Figure 1: Millers Class I Gingival Recession With Height Of 6 Mm W.R.T. 41**



**Figure 2: Width Of Recession Of 3 Mm W.R.T. 41**



There was an adequate attached gingiva (6 mm) and vestibular depth was present in relation to tooth 31. Intra-operative periapical radiograph revealed no interdental bone loss in 31, 41 regions. Trauma from occlusion and tooth malposition in respect to the involved tooth was present. Trauma from occlusion was relieved.

**Pre Surgical Protocol:** Patient was educated and motivated regarding procedure. Oral hygiene instructions were given. On appraising the affirmative agreement from the patient, consent was taken prior to the execution of surgical root coverage procedure. Scrupulous scaling and root planning was performed and the patient was cyclically recalled to evaluate her oral hygiene prior to the planning of periodontal surgical procedure.

**Surgical Procedure:** Local anesthesia (2% lignocaine) was given to anaesthetize the recipient site (41, 42 region). The root surface

was planed for plaque, calculus, accretions and surface irregularities. Recipient site was prepared carefully by performing intra-sulcular incision around the tooth (41) removing adjacent epithelium and connective tissue while maintaining a strip of attached gingiva using Gracey curette.

Donor site was prepared by extending sulcular incisions from the distal surface of 41 till mesial surface of 43. Two vertical incisions were made till alveolar mucosa, one at distal line angle of 41 and other at mesial line angle of 43 for adequate mobility of the flap. Partial thickness flap was raised with a cut back incision towards 41 to ensure that the flap is free of tension so that it can be moved freely over the recipient site. [Figure 3].

**Figure 3: Pedicle Graft Was Raised From Donor Site Of 42 To Recipient Site Of Denuded Surface Of Tooth 41**



The pedicle flap was positioned at cemento-enamel junction (CEJ) at recipient site and sutured with 4-0 silk sutures by continuous sling method. [Figure 4]. The area was protected with Coe-Pack [Figure 5].

**Figure 4: Lateral Pedicle Flap Was Sutured On Root Of 41 Using 4-0 Silk Sutures**



**Figure 5: Surgical Site Was Covered By Coe-Pack**



The patient was given oral hygiene instructions and instructed regarding post-operative care of the surgical site. She was advised to take analgesic and antibiotics. She was instructed to use Chlorhexidine gluconate mouthwash 0.2% twice daily and not to brush on the surgical area.

Sutures were removed after 15 days of surgery with reinforcement of oral hygiene instructions, with follow up at 1 month and 3 months [Figure 6,7,8]. Examination of surgical site showed complete coverage of root surface of 41 with excellent color matching.

**Figure 6: Post-Operative View After 1 Week**



**Figure 7: Post-Operative View After 1 Month**



**Figure 8: Post-Operative View After 3 Months**



**Discussion:** Gingival recession may represent problems to the patient because of poor aesthetics, pain, root sensitivity, root caries, root abrasion, plaque retention and fear of tooth loss<sup>7</sup>. Several surgical techniques are described to manage gingival recession defects including root coverage techniques.

Amongst all of them, laterally positioned pedicle graft, a procedure which was presented by Grupe and Warren in 1956, epitomizes one of the first in the series of procedures of mucogingival surgery intended to cover exposed root surfaces<sup>8</sup>.

In 1966, Grupe altered the lateral pedicle technique by means of sub marginal incision at the donor site with the purpose that no denuded bony surfaces would be formed<sup>9</sup>.

In the present case, we chose Lateral pedicle graft technique by partial thickness pedicle flap; In this technique, we have raised partial thickness flap at the donor area so that receptor area, will receive mucoperiosteal flap, and at the same time that, the donor area will be covered by tissues of the flap, avoiding bone exposure to the oral environment.

Advantages of using lateral pedicle graft over the root coverage procedure are that it is very simple and it requires only one surgical site with good vascularity of pedicle.

The disadvantage of using lateral pedicle graft is probable loss of bone and recession of gingiva on the donor site.

Similar to other studies this case report also showed excellent results in root coverage in terms of gain in height and width.

**Conclusion:** To conclude, present case report lateral pedicle graft with sub marginal incision was used to cover Miller's recession in mandibular anterior region. This technique has been demonstrated to be a reliable and predictable treatment modality for managing isolated recession defects affecting aesthetic zones of the mouth. Nevertheless, vigilant case selection and surgical management is vital if an efficacious consequence is to be accomplished.

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