CASE REPORT

Isolated gingival recession coverage by lateral pedicle graft procedure: A case report

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Abstract

The coverage of denuded roots represents one of the challenges of periodontal treatment as clinician is not only required to treat disease and improve function but also cope with ever demanding esthetics of patients. Among the several techniques is the laterally positioned flap. A 19-year-old female patient presented with Miller Class I gingival recession in tooth no 31. Her main concern was unpleasant elongated tooth appearance of front tooth. As adjacent tooth showed good periodontal condition with adequate keratinized gingival and no interproximal bone loss, lateral pedicle graft procedure was selected. To conclude, post-treatment assessment showed complete root coverage and an excellent aesthetic outcome of lateral pedicle graft root coverage procedure of an isolated gingival recession.

Keywords:
Esthetics, gingival recession, pedicle graft, root coverage

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Introduction

Gingival recession is the apical migration of marginal gingival using the cemento-enamel junction as landmark, consequently exposing the root surface to the oral environment. More than 50% of the population has one or more sites of gingival recession ≥1 mm. Most common site of gingival recession is buccal surface of the tooth as a result of vigorous tooth brushing. However, there are several other factors that may also account for this unpleasant and unaesthetic effect like plaque induced gingival inflammation, lack of attached gingiva, malpositioned tooth, shallow vestibule or local iatrogenic factors. In the past few decades, various periodontal plastic surgical procedures have been employed in the treatment of gingival recession 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 main objective of covering denuded root surface is for treating hypersensitivity and for improved aesthetics.

The present report describes a case of esthetic root coverage of an isolated gingival recession on mandibular incisor by employing lateral pedicle graft technique.

Case Report

A 19-year-old healthy female patient presented to the Outpatient Department of Periodontology, Faculty of Dental sciences, Chhatrapati Shahuji Maharaj Medical University (King George’s Medical University) Lucknow, Uttar Pradesh, India with a chief complaint of “an elongated tooth” in the front region of lower jaw. Patient also had mild sensitivity to cold in relation to aforementioned tooth. Patient had a non-contributory medical history. Intraoral clinical examination revealed a Miller’s localized Grade I gingival recession [Figure 1] in relation to lower left mandibular central incisor (31) measuring 3 mm in height and 2 mm in width [Figure 2]. There was an adequate attached gingiva (4 mm) present in relation to tooth 32. Adequate vestibular depth was observed for mandibular labial vestibule. Intra-operative periapical radiograph revealed no interdental bone loss in 31, 32 region. Trauma from occlusion and tooth malposition in respect to the involved tooth was ruled out clinically.

Thorough scaling and root planning was done and the patient was periodically recalled to assess her oral hygiene before planning periodontal surgical procedure. On assessing the positive compliance from the patient she was educated, and
her consent was taken before performing surgical root coverage procedure.

Local anesthesia (2% lignocaine with 1:80,000 adrenaline) was used to anaesthetize the surgical site (31, 32 region). Recipient site was prepared by using 15 no. surgical blade, starting an internal bevel incision around denuded root of 31 removing adjacent epithelium and connective tissue. The incision skirted mesial surface of 31 with external bevel incision to expose the connective tissue surrounding the denuded root surface. Donor site was prepared by extending sulcular incisions from the distal surface of 31 till mesial surface of 33. Two vertical incisions were made, one at distal line angle of 31 and other at mesial line angle of 33. Vertical incisions were made continuous with horizontal incisions, and were extended apically to the mucosal tissue to permit adequate mobility of the flap. The flap was raised using a sharp dissection. A cut back releasing incision was made to ensure that the flap is free of tension is free enough to permit movement to the recipient site [Figure 3]. Before placing pedicle flap on denuded root, a though root planning was done using curettes and root was also conditioned with a cotton pellet soaked in a solution of 100 mg/ml tetracycline/saline for 4 min. This was followed by copious irrigation with saline. The pedicle flap was positioned 1 mm coronal to cemento-enamel junction of tooth 31 and sutured by 4-0 silk sutures [Figure 4]. The area was protected with Coe-Pack [Figure 5].

The patient was instructed regarding post-operative care of the surgical site. She was advised to take analgesic and antibiotics for 5 days. She was instructed to not to brush on

Figure 1: Millers Class I gingival recession in relation to 31

Figure 2: Height of recession in tooth 31 is 3 mm

Figure 3: A pedicle graft was raised from donor site of 32 to recipient site of denuded surface of tooth 31

Figure 4: Lateral pedicle flap was sutured on root of 31 using 4-0 silk sutures

Figure 5: Surgical site was protected by Coe-pack
the surgical area and use mouthwash chlorhexidine gluconate 0.2% twice daily. Sutures were removed after 10 days of surgery. Examination of surgical site showed complete coverage of root surface of 31 with excellent color matching [Figure 6]. Patient was totally satisfied with the treatment outcome. Oral hygiene instructions were reinforced, and patient was instructed to come for regular check-up.

**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.[4] Several surgical techniques are described to manage gingival recession defects including root coverage techniques, increasing the keratinized tissue, frenectomy, with varied reported clinical effectiveness.

Root coverage has become an important treatment modality because of increasing cosmetic and functional treatment. In the present case, patient was concerned about unpleasant aesthetics due to gingival recession of front tooth. Success of root coverage procedures depends on several factors like elimination and control of etiology, interproximal bone level, and the choice of best coverage procedure based on the clinical situation.[5] In the present case, we chose Lateral pedicle graft technique described by Staffileno because of the good periodontal condition of the neighboring tooth with adequate keratinized gingival and normal bone height.[6]

Lateral pedicle graft was first described by Grupe and Warren as a surgical procedure comprising the use of a full thickness pedicle flap moved horizontally to cover the denuded root; this can consequently lead to exposure of donor area’s bone tissue.[3] Staffileno recommended the use of partial thickness pedicle flap; consequently maintaining the donor area covered by periosteum.[6] A further modification was suggested by Parkinson et al. called as double – papilla technique.[6] In this technique, we have a partial thickness flap at the area further from the receptor site while a full thickness flap is raised in the area close to it. Therefore, receptor area will receive mucoperiosteal flap, at the same time that, the donor area will be covered by tissues of the flap, avoiding bone cortical exposure to the oral environment.

Advantages of using lateral pedicle graft over the root coverage procedure is that it requires only a single surgical site, with no separate donor site and offers an excellent color matching of the graft tissue in harmony with surrounding tissues as observed in present case. The disadvantage of using lateral pedicle graft is possible bone loss and gingival recession on the donor site. Guinard and Caffesse reported an average of 1 mm of post-operative gingival recession on the adjacent donor site.

Root conditioning of denuded root was done with tetracycline in the current case. Tetracycline reacts with tooth hard tissue and act as a long lasting antimicrobial agent slowing biofilm formation and diminishing the collagenolytic activity of bacterial endotoxins.[4,5] To conclude, present case report depicts lateral pedicle graft is an effective treatment modality for managing isolated recession defects affecting aesthetic zones of the mouth.

**References**


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