

Re-invigoration of Pink Esthetics by a Novel Minimally Invasive Technique: A Report of Two Cases

Abstract

The importance of pink esthetics as well as increased patient comfort has been gaining its pace in dentistry. Moreover, when it comes to the treatment of gingival recession, the ideologies of the periodontists have changed over time, i.e., from “extension to prevention;” it has now become “conserve to preserve.” Utilizing this same principle, pinhole technique was introduced comprising sutureless surgery with minimal surgical intervention, thus providing maximum comfort to the patient while undergoing treatment and postoperatively. This article presents a case report of two cases who were treated with a minimally invasive pinhole surgical technique, with complete root coverage and minimal complications.

Keywords: Minimally invasive surgery, pinhole technique, recession, root coverage

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Introduction

Gingival recession is one of the most common esthetic concerns manifested in most populations. It refers to the apical migration of the marginal gingiva causing exposure of root surfaces, leading to unpleasant esthetics, root caries, erosion, and hypersensitivity.^[1] Currently, the most accepted treatment for gingival recession is connective tissue graft, which is also considered as a gold standard. However, this technique is associated with a second surgical site for donor tissue and is also associated with complications, such as bleeding, postoperative pain, and swelling of the donor site.^[2] Hence, despite the awareness about the condition and need for treatment, a lot of patients never completed treatment due to the fear of extensive surgical and grafting procedures. Therefore, to overcome these impediments, a novel technique for the management of Miller's Class I and Class II type of gingival recession was proposed, with the advantages of a pinhole incision and cost-effectiveness and without the necessity for tissue grafting or suturing.^[3] The present article presents a report of two cases validating the effectiveness and predictability of this technique.

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Case Reports

Case 1

A 26-year-old male reported to the department of periodontology with a chief complaint of sensitivity to hot and cold with respect to left maxillary canine. The patient was appearing systemically healthy. Intraoral examination revealed Miller's Class I gingival recession in relation to tooth number 23 [Figure 1].

Case 2

A 48-year-old male reported to the department of periodontology with a chief complaint of sensitivity to hot and cold and receding gums with respect to left maxillary canine. Intraoral examination revealed Miller's Class I gingival recession in relation to tooth number 23 [Figure 2]. For the treatment of these localized recessions, pinhole technique was selected.

Surgical procedure

The patients were explained about the procedure and an informed consent was obtained from both the patients. Before the surgical procedure, a detailed medical and dental history was taken from the patient, along with complete blood investigations and periapical radiographs. Phase I therapy was completed and the patient was then recalled after 3 weeks.

Local anesthesia (2% lignocaine and 1:80,000 adrenaline) was administered at

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the surgical site. Then, a small hole of 2–3 mm was made in the height of the mucobuccal fold 1–2 mm mesioapical to the tooth concerned [Figure 3]. Then, using specialized instrument (Periosteal Elevator 20 Sicilia-[P20SIC6] by Hu-Friedy, Chicago), access was gained through that pinhole till the marginal and interdental gingiva of the respective tooth [Figure 4]. The fibrous attachment was removed making the gingival tissue free from the alveolar bone. After attaining complete passive mobilization of the tissue, the entire tissue was advanced coronally. After that, a resorbable collagen membrane (PerioCol®-GTR by Eucare Pharmaceuticals Pvt. Ltd., Thirumudivakkam, Chennai, Tamil Nadu) of 2–3 mm in dimension was introduced through the hole beneath the interdental papilla till sufficient fullness of tissues was achieved [Figure 5]. This was necessary to stabilize the flap at its new position and make the mucogingival complex self-holding. No sutures were given or any other incision was made [Figure 6]. After ensuring complete stabilization of the tissues, periodontal dressing was placed. Analgesics were prescribed for 5 days and postoperative instructions were given. Patients were advised to avoid brushing to the surgical site and to rinse twice daily with 0.2% chlorhexidine mouthwash for a week. Both the patients were re-evaluated after 7 days, 3 months, and 6 months [Figures 7 and 8]. The patients demonstrated

complete root coverage and the tissues utilized for making hole healed completely. The patient demonstrated minimal postoperative discomfort with no bleeding or pain.

Discussion

The aim of periodontal therapy is to restore and maintain the functional form of periodontium throughout the patient's life. Mucogingival surgeries were always associated with extensive surgical and grafting procedures, which lead to a greater patient discomfort and sometimes postoperative complications.^[2] However, apart from maintaining functional periodontium and esthetics, patient comfort also plays a pivotal role in deciding the treatment plan. Gingival recession leads to a variety of problems, including hypersensitive teeth, root caries, abrasion of teeth, and esthetic concerns. The major etiological factors responsible for gingival recession include the presence of plaque and calculus, faulty tooth brushing, orthodontic tooth movement, position of the tooth, smoking, faulty restorations, and dentures along with high frenal attachment.^[4]

The management of gingival recession is based upon a thorough assessment and removal of etiological factors along with that degree of tissue involvement. Surgical intervention is indicated when the recession is posing various problems to the patient, including alteration in the esthetics.^[5]



Figure 1: Preoperative photograph of case 1

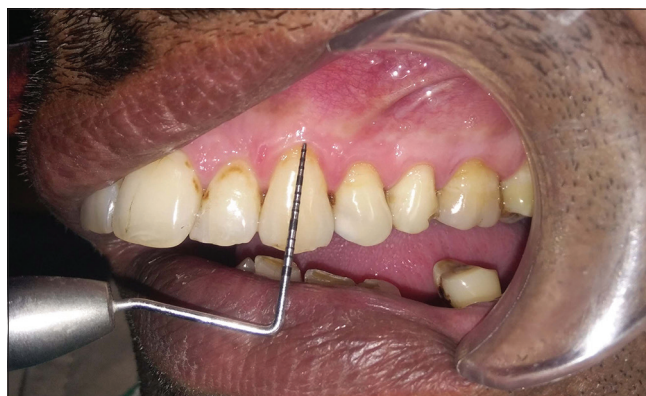


Figure 2: Preoperative photograph of case 2



Figure 3: Creation of pinhole in the vestibule to gain access



Figure 4: Gaining access by releasing fibrous attachment



Figure 5: Introduction of resorbable membrane to achieve tissue stability



Figure 7: Six-month postoperative photograph of case 1

With the introduction of newer techniques in recent years, there is an increase in the treatment options for the treatment of marginal tissue recession. Currently, a shift from the extensive surgical procedures to minimally invasive techniques has been seen. The advantages of these techniques include reduction in surgical time and increased patient comfort. One such technique of recession coverage was given by Chao in 2012.^[3] This technique has provided with the added advantage of no donor tissue harvesting, no suturing, and also the incision required being pinhole size. Thus, reduction of postoperative swelling, bleeding, and pain can be manifested.

In a series of five cases (18 recession), this technique has shown to provide 96.7% of overall recession coverage. In our cases also, complete root coverage was seen with no complications.^[6] This technique combines techniques from traditional recession coverage procedures, such as coronally advanced flaps along with guided bone regeneration, to treat gingival recession. This procedure did complete justice with the patients' demands of esthetics along with minimal



Figure 6: Immediate postoperative photograph. Note the recession coverage achieved immediately



Figure 8: Six-month postoperative photograph of case 2

discomfort and also saved operators time. However, technical skill is required for this procedure; moreover, this technique is less predictable for Millers Class III as well as Class IV type of recession.

Conclusion

The outcome of the current cases confirms esthetics and hypersensitivity as the primary indication for root coverage. Pinhole technique is a very promising minimally invasive technique for the management of Miller's Class I and II type of recession with the advantages of a pinhole incision with no sutures. However, to be ensured about the potential of this technique, further studies with longer follow-up are required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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