



VISTA TECHNIQUE TO AUGMENT GINGIVA IN LOWER ANTERIOR TOOTH : A CASE REPORT

Periodontology

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ABSTRACT

One of the most common esthetic concerns associated with the periodontal tissues is gingival recession. Gingival recession is the exposure of root surface due to apical migration of the gingival tissue margin from the cemento-enamel junction (CEJ). Although it rarely results in tooth loss, marginal tissue recession is associated with thermal and tactile sensitivity, esthetic complaints, and a tendency toward root caries. Recently, new techniques have been suggested for the surgical treatment of single or multiple adjacent recession type defects. This case report describes the use of the vestibular incision subperiosteal tunnel access (VISTA) technique in combination with a guided tissue regeneration (GTR) based root coverage procedure over mandibular central incisors presented with class II gingival recession. Demonstrating favorable healing without the need for a donor site and minimal trauma at the surgical site, this procedure may be advantageous in treatment of recession as compared to other treatment modalities.

KEYWORDS

Gingival recession, Vestibular Incision Subperiosteal Tunnel Access Technique {VISTA}, Guided tissue regeneration {GTR}.

INTRODUCTION:

Improved perception of esthetics and also patient's expectation and demand towards the elimination of exposed root surfaces that may elicit sensitivity and have greater caries potential than roots that are covered. {1} It affects almost all middle and old aged people to some extent. {2}. Gingival recession can be caused by erroneous tooth brushing, malpositioning of the tooth, soft tissue friction, inflamed periodontal tissues, aberrant frenal attachment, oral habits, iatrogenic factors {Moscow et.al., 1966}, alveolar bone dehiscence {Aldritt et.al., 1968}.

Coverage of recession-type gingival defects usually involves surgical procedures to restore function and esthetics. Different procedures have been described for recession coverage involving flap techniques, free autografts (i.e., subepithelial connective tissue grafts, free gingival grafts), use of growth factors (i.e., enamel matrix derivative), Guided tissue regeneration membranes and combinations of these {3}.

GTR-based root coverage procedures have emanated as an effective treatment because it may not only achieve comparable results to those of traditional techniques, but also establish histologically new attachment formation. Both resorbable and non-resorbable membranes have been used with pliable results for root coverage. Advantages provided with GTR-based root coverage are healing occurs by new connective tissue attachment followed by regeneration of new cementum and bone. {4}

So the current case report introduces a novel, minimally invasive approach, i.e. vestibular incision subperiosteal tunnel access (VISTA) in the mandibular anterior region with class II Miller recession, which was treated using Guided tissue regeneration membrane. Written informed consent was obtained from the patient.

CASE REPORT:

A 39 year old male patient was referred to the department of periodontics with a chief complaint of receding gums in the lower front tooth region since 1 year. On clinical examination there was a miller's class II recession in relation to 31. Routine blood investigations were performed and it showed normal results. At the Initial phase scaling and root planing was performed and patient was put under strict oral hygiene maintenance and recalled after 1-week.

At the time of re-evaluation gingiva appeared to be healthy and study models were prepared for fabrication of customized acrylic occlusal stent and vertical grooves or markings were made to guide the

placement of the probe in the same plane and direction repeatedly for relative measurements and to avoid any variations. {Figure 1}

SURGICAL PROCEDURE:

The operative site was anaesthetized with 2% lignocaine HCL with adrenaline (1:80,000) using infiltration technique. The VISTA approach began with a vertical incision in the midline of the mandibular incisor region in relation to 41 and 42. Subperiosteal tunnel was created by passing the incision through the periosteum and inserting tunneling instruments {TK1 AND TK2} between the periosteum and bone through the vertical incision. {Figure 2}.

For mobilizing gingival margins and also to facilitate coronal repositioning, the tunnel was extended for at least one or two teeth beyond the teeth requiring root coverage. {Figure 3}. Subperiosteal tunnel extension was carried out interproximally also below the papilla without any surface incisions. Guided tissue regeneration membrane {Figure 4} was then trimmed to fit the dimensions of the recipient site and the width was adjusted to extend at least 3-4 mm beyond the bony dehiscence's overlying the root surfaces.

The GTR membrane was then carefully inserted into the subperiosteal tunnel and repositioned below the gingival margin of each tooth. The membrane was then pushed forward coronally and stabilized in the new position with a coronally anchored suturing technique. Then vertical incision was sutured with the help of resorbable suture and the knots positioned at the mid coronal point of each tooth and stabilized at that position by placing composite stops. {Figure 5}

The patient was instructed to apply cold compression on the face over the operated area during the first few hours post operatively. Analgesics were advised twice daily for three days. The patient was instructed not to use any mechanical plaque control device at the operated site for 1 week and to rinse twice daily with chlorhexidine mouthwash. {4}

Patient was recalled after 10 days for re-evaluation. After 6 months of follow-up, it was noticed that 91% of root coverage was achieved without any post-surgical complications. {Figure 6}

DISCUSSION:

The main goal of periodontal therapy is not only to reduce periodontal destruction but also to eliminate the recurrence of the disease and regeneration of lost tissues. Gingival recession is clinically manifested as the apical migration of the junctional epithelium with exposure of

root surfaces thus causing clinical problems such as Sensitivity of root, dental Caries, Cervical abrasions on root, and also makes Plaque control difficult.{5}

Treatment of gingival recessions has become an important therapeutic issue due to tremendous increase in number of cosmetic requests from patients{6}. Patient's demand for esthetics, due to exposure during smiling or function, of portions of the root surface are the main indication for root coverage procedures. Thus, complete root coverage is the primary goal to be achieved when the patient complains about esthetic appearance of teeth.

Although complete root coverage is established; sometimes results may not be satisfactory with the presence of excessive thickness of gingiva; that occurs frequently when free or connective tissue graft is harvested from the palate and utilized for recession coverage.

Another factor to be considered is that gingival recession sometimes involves either single tooth or multiple tooth.

Treatment of isolated or multiple gingival recessions with different surgical procedures depends on many factors such as size of the defect, amount of keratinized tissue present, and gingival thickness which are related to the defect and/or patient.{7}

In this case report the minimally invasive VISTA approach was used combined with a Guided tissue regeneration membrane which has a number of unique advantages for the successful treatment of recession defects. The VISTA approach reduces the possibility of traumatizing the gingiva of the teeth being treated. Critical to the success of VISTA is a careful subperiosteal dissection that reduces the marginal gingival tension during coronal advancement while at the same time maintains the anatomical integrity of the interdental papillae by avoiding papillary reflection.{8}

An important technical difference between the VISTA and other tunneling approaches is the degree of coronal advancement of the gingival margin advocated during the procedure. As noted previously, the gingival margin, with Guided tissue regeneration membrane, pushed to the most coronal level of the adjacent interproximal papillae and sutures are then secured to the labial aspect of the tooth; effectively preventing relapse of apical migration of gingiva during the initial stages of healing.

With the advancement of present coronally anchored suturing technique; it helps in fixation of gingival margins and also minimizes micromotion of the regenerative site. Reduction of micromotion has proven to be more advantageous of the present technique over conventional methods. In VISTA technique, it was also possible to treat single or multiple recession defects without requiring secondary harvesting procedures.{5}

Use of Guided tissue regeneration membrane in this case report has many advantages such as it does not require second surgical site, acts as a space maintainer, prevents migration of epithelial and connection tissue cells into the defect area, Use of membrane enhances the new attachment gain in intrabony defects. Other advantages are the esthetic results with good color unanimity with the surrounding tissue.{4}

CONCLUSION:

This novel biological approach involving Guided tissue regeneration membrane combined with a minimally invasive surgical method for the treatment of marginal soft-tissue recession demonstrates favorable healing without the need for a donor site to provide connective tissue. This technique also preserves the papilla, increasing the soft tissue thickness and utilizes a minimally invasive surgical approach.

FIGURES:



FIGURE 1



FIGURE 2



FIGURE 3



FIGURE 4



FIGURE 5



FIGURE 6

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