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## Multiple gingival recessions treated with subepithelial connective tissue graft in vista technique: A case report

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### Abstract

Recession of gingiva presents a common challenge for the clinicians. Many different periodontal plastic surgeries have been recommended for root coverage, like coronally advanced flap, pedicle graft, free gingival graft, connective tissue graft, guided tissue regeneration technique, pouch and tunnel technique etc. among which 'vestibular incision sub-periosteal tunnel access (VISTA)', proposed by Zadeh HH, offers a predictable and long lasting results with a minimally invasive surgical approach. This article presents a case report on management of multiple gingival recession in anterior maxilla with VISTA technique in combination with sub-epithelial connective tissue graft (SCTG).

**Keywords:** Recession, VISTA, SCTG

### Introduction

Gingival recession is defined as the 'displacement of marginal gingiva apical to the cemento-enamel junction' [1]. It represents a clinical condition commonly encountered in clinical practice, and resulting in dental sensitivity, plaque retention, caries and aesthetic issues [2]. Several root coverage procedures have been suggested for correction of recession defects, including various tunnel techniques, which offer minimal access, lesser relapse, greater coverage, maximum integrity of interdental papilla with optimum esthetics and prevent the scarring resulting from vertical releasing incisions [3].

In 2011, Zadeh HH modified the tunneling techniques introducing the VISTA (Vestibular Incision Sub-periosteal Tunnel Access) technique for the treatment of multiple adjacent recession defects. VISTA involves an access incision near the maxillary anterior frenum, and subsequently elevation of sub-periosteal tunnel [4]. It also involves sulcular incision without incorporating interdental papilla, and subsequently advancement and stabilization of the gingival margins by 'coronally anchored suturing' [5]. Autogenous sub-epithelial connective tissue graft (SCTG) has been effective in providing long-term root coverage, proper mucosal color match and increasing the width of keratinized tissue; and hence considered as the gold standard therapeutic option in root coverage procedures [6].

### The Case Report

A forty year's male visited to Department of Periodontics with chief complain of sensitivity in upper and lower front tooth region with un-esthetic smile. Patient had no smoking habit, and reported no relevant medical and dental history. Intra-oral clinical examination revealed, Miller's class I defect in maxillary central incisors and lateral incisors (11, 12, 21, 22) (Fig1). 11, 12 and 21 had recession of 2mm, and 22 presented recession of 3mm (Fig2 and Fig3). Mild plaque and calculus were present. Occlusion was found normal, i.e. non-traumatic. Intraoral peri-apical radiographs showed no interdental bone loss.

The patient underwent basic non-surgical periodontal therapy including scaling and root planing, and oral hygiene instructions were given. After four weeks of phase 1 therapy, surgery, i.e. phase 2 therapy was planned. Signed informed consent was obtained from the patient after discussion of the procedure that would be performed, and all possible complications were thoroughly explained.

Under aseptic conditions, local anesthesia was given, following standard technique. First, the cervical bulge (bucco-lingual convexity) was reduced by using a band hand-piece. Then, a vertical access incision was made using blade no. 15c, close to the frenulum (Fig.3) through the periosteum to elevate the periosteum and to expose of the underlying osseous plate, creating the sub-periosteal tunnel (Fig.4). The tunnel was extended one or two teeth beyond the teeth being treated, and well beyond the muco-gingival margin for mobilizing marginal tissue and allowing its tension-free coronal repositioning. The tunnel was also extended interproximally under each interdental papilla as far as the embrasure space permits, without making any incisions through papilla.

The muco-gingival tissue was then coronally advanced by the aid of asuture at a point approximately 2-3 mm apical to the existing respective gingival margin (Fig.5). The suture was then tied to position the knot at the mid-coronal point of the facial aspect of each tooth, which was secured by light cure flow-able composite resin preventing the apical relapse. After this, a connective tissue graft was harvested from the palate (Fig.6 and Fig.7). This CTG was tucked into the tunnel through the vertical access incision opening (figure 8). The access incision was then approximated and interrupted suture was given (Fig.9). Donor site was covered with an acrylic plate (figure 10) and periodontal dressing was placed over the surgical field. Postoperative instruction was given along with analgesic and antibiotic coverage.

Suture was removed after two weeks and healing was found satisfactory (Fig.11). The patient was kept under maintenance phase and recalled after at one moth and two months. On two months follow-up, there was 100% root coverage in 11,12,21,22 (Fig.12).



**Fig 4:** Preparation of sub-periosteal tunnel



**Fig 5:** Coronal advancement of gingival margin and securing it with suture, by the aid of light cure restorative composite.



**Fig 1:** Pre-operative image showing gingival recession in 12, 11, 21 and 22.



**Fig 6:** Harvesting the connective tissue graft.



**Fig 2:** The recession defects were measure 2mm in 12, 11, 21; and 3mm in 22.



**Fig 7:** The connective tissue graft.



**Fig 8:** Placement of the CTG into the tunnel



**Fig 9:** Suturing at the access incision



**Fig 10:** The donor site is covered with a acrylic plate



**Fig 11:** 15 days post-operative



**Fig 12:** 2 months post-operative showing complete root coverage of 12, 11, 21 and 22.

**Discussion**

Recession is a common, yet challenging clinical problem that a dental surgeon encounters in practice. Exposed roots, besides being unaesthetic, also result additional problem like dental sensitivity, caries and pulpalgia. Hence root coverage is an important procedure in periodontal treatment now-a-day. There have been various technique employed for root coverage, such as coronally advanced flap, pedicle graft, free gingival graft, connective tissue graft, guided tissue regeneration technique, pouch and tunnel technique etc. All of these involve intra-sulcular incisions resulting trauma to the sulcular epithelium and subsequent unfavorable healing. So, to overcome the shortfall of those techniques, a minimally invasive technique called ‘vestibular incision sub-periosteal tunnel access (VISTA)’ has been presented in this article, which offers a number of benefits in managing gingival recession defects. In this technique, a single vestibular incision can provide access to the underlying alveolar bone and thus reduces the risk of severing the dento-gingival attachment of the teeth being treated [7]. The application of connective tissue graft instead of other substitutes in this case report could have contributed to improved outcomes of the surgery [8]. *Lee et al* reported that connective tissue graft along with VISTA technique increased soft tissue dimensions around implant supported restorations of anterior maxilla [9]. *Jimenez et al* observed mean root coverage of 58.72% with complete root coverage in 29% of the recessions, when treated 38 Miller’s class III recession with VISTA technique and CTG [10].

**Conclusion**

VISTA technique together with CTG has been successfully used as a treatment modality for multiple Miller’s class I recession defects. However, more clinical studies with a longer post-operative follow up period and a larger number of procedure are required for establishment of benefits from the VISTA technique in the treatment of multiple gingival recession defects, especially in the aesthetic zone.

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