



The New ‘Vista’: Management of Multiple Gingival Recession

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ABSTRACT

As gingival recession (GR) becomes a more common condition, root coverage becomes a crucial aspect of aesthetic and periodontal treatment. For the treatment of recession defects, a variety of therapeutic alternatives are available, albeit many of these are more appropriate for treating isolated problems. The need for autogenous tissue harvesting and the related morbidity, as well as scar development at the recipient site as a result of surface incisions, are some of the drawbacks of existing procedures. An innovative, minimally invasive technique for treating several continuous abnormalities in the maxillary anterior region is described in the current case reports.

Keywords: Gingival recession, VISTA, minimally invasive, root coverage

INTRODUCTION

A common clinical problem known as gingival recession causes plaque retention, dentinal hypersensitivity, pain, carious and non - carious

lesions, and poor aesthetics. Recession is caused by a number of anatomical, pathologic, physiological, and iatrogenic causes. Periodontal disease, improperly forceful tooth brushing, inflammation, or occlusal abnormalities are some of the causes. Both localization and generalisation are possible.[1]

Recession treatment has grown in popularity as a result of rising need for better aesthetics. The gold standard for the treatment of GR at this time is connective tissue transplant (CTG). However, it has some significant drawbacks, such as the requirement of a distant donor site for harvesting, the scarcity of available tissue, and a higher risk of post-harvest morbidity.[2]

Complete root coverage (CRC) can be regarded as the key clinical outcome, and the choice of surgical approach is largely influenced by the local anatomical features and the needs of the patient. The coronal advanced flap (CAF) may be advised in individuals

who still have some keratinized tissue apical to the recession defect. Using this surgical method, the original (presurgical) soft tissue marginal morphology is fully recovered, the treated area blends in well with the surrounding soft tissues in terms of colour, and the roots are completely covered.[3]

To avoid some potential issues with intrasulcular tunnelling techniques, Dr. Zadeh created a brand-new method for root covering known as vestibular incision subperiosteal tunnel access (VISTA). This method has become popular since it offers a less invasive alternative to treating GR and shows good outcomes in root coverage.[4]

There are various classifications of gingival recession. Although several classifications have been suggested, the more recent Cairo et al.[5] classification is treatment-focused and takes into account the most recent surgical guidelines for root coverage. From the cementoenamel junction (CEJ) to the free gingival margin, recession is assessed. Then, the distance between the CEJ and the sulcus/ greatest pocket's apical extension is measured as the interproximal attachment. If there is any buccal attachment loss, it is measured similarly but from the direct buccal aspect. These are the categories according to Cairo et al:

- Recession Type 1 (RT1): Gingival recession without interproximal attachment loss. The interproximal CEJ is not detectable. Miller Class I and II equivalency.
- Recession Type 2 (RT2): The amount of interproximal attachment loss is less than or equal to the buccal attachment loss. Miller Class III equivalency.

- Recession Type 3 (RT3): The amount of interproximal attachment loss is greater than the buccal attachment loss. Miller Class IV equivalency.

The surgeon or referring dentist should incorporate CEJ reconstruction in the mucogingival treatment plan. Additionally, using the CEJ as an anatomical marker for root coverage guarantees that the blood supply reaches the transplanted tissue's most coronal regions. In order to diagnose recession, Pini-Prato et al.[6] created the following categorization for the CEJ and related root conditions:

- Class A: CEJ is detectable with (+) or without (-) a root step or concavity > 0.5 mm.
- Class B: CEJ is undetectable with (+) or without (-) a root step or concavity > 0.5 mm.

Following are cases depicting VISTA technique to treat multiple gingival recession cases.

CASE 1

A 49 year old male patient reported to the department of Periodontology with the chief complaint of sensitivity to hot and cold in the upper front teeth for two months along with long teeth appearance. Extraoral examination revealed adequate mouth opening. On intra oral examination clinically healthy gingiva with patchy melanin pigmentation and recession of varying grades was seen in both the upper and lower arches. The keratinised tissue width and attached gingiva was found to be adequate with no aberrant frenum. No loss of interdental papillary height was seen (Figure 1)



Figure 1

A diagnosis of marginal tissue recession (RT-1 B+ wrt 13 & 23 RT- 1 A- wrt 11,12, 21,22) was made. After phase I when the patient demonstrated adequate plaque control the case was planned for surgical coverage of gingival recession and the various options available were as listed –

- Coronally advanced flap
- Pouch and Tunnel
- **Vestibular Incision Subperiosteal Tunnel Access (VISTA)**
- Semilunar Coronally advanced flap (SCAF)

And in terms of the advantages that we gain in a tunnelled surgical procedure over the available

options, chosen technique was VISTA as our modality (less technique sensitivity, preservation of mucosal texture, less scarring and maintenance of vascularity of the flap).

Two bilateral vertical full thickness vestibular incisions were made crossing the mucogingival junction and 3-4 mm apical to MGJ. Modifications were done from the original VISTA due to the length of the span of the surgical zone and the availability of the length of VISTA instruments (Figure 2)

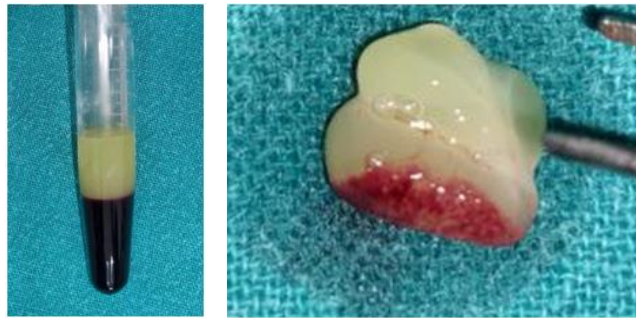


(Figure 2)



(Figure 3)

Vestibular to coronal approach of tunnelling was done. (Figure 3)



(Figure 4 A & B)

Autogenous PRF plug was formulated by drawing 10 ml of patients venous blood and running it in centrifuge for 1200 rpm for 10 minutes following the Choukron protocol (Figure 4 A & B). 4-0 polypropylene sutures are secured to the facial aspect of each tooth by placing a small amount of flowable composite resin over the knot, effectively preventing apical

relapse of the gingival margin during the initial stages of healing. And closure of the vestibular incision with interrupted suture using 4-0 monofilament suture approximately 2 to 3 mm apical to the gingival margin of each tooth. (Figure 5)



(Figure 5)

The following is the follow up after 3 months. (Figure 6 A & B)



(Figure 6 A and B)

CASE 2

A 37 year old male patient reported to the department of Periodontology with the chief complaint of sensitivity to hot and cold in the upper front teeth for two months. Intraoral examination revealed clinically

healthy gingival tissues with adequate keratinized tissue and attached gingiva no loss of interdental papillary height. (Figure 7)



(Figure 7)

A diagnosis of marginal tissue recession (RT-1 A- wrt 11,12,13, 21, 22 & 23) was made. The surgical options available for this case is as follows –

- Coronally advanced flap (CAF)
- Pouch & Tunnel
- **Vestibular incision subperiosteal tunnel access (VISTA)**

VISTA technique was adopted for this case (Figure 8)



(Figure 8a)



(Figure 8b)



(Figure 8c)



(Figure 9a) Immediate Post Operative Image



(Figure 9b)

3 Months Follow Up Showing Post Operative Outcome of the Case (Figure 9 B)

DISCUSSION

Gingival recession, according to the AAPs GPT 2012, is the movement of the gingiva to a point apical to the cemento-enamel junction. In accordance with Marini et al. (2004), the presence of plaque is an etiology for GR, which is brought on or made worse by abrasive and traumatic tooth brushing, periodontal disease(the

loss of attachment caused by the inflammation is followed by the loss of bone and gingiva), malaligned teeth (labially inclined), high attachment of frenum with associated muscle pull, thin gingival biotype, etc. The primary reason for which a patient seeks treatment is esthetics/ cosmetic demands of the pateint , root sensitivity and to facilitate plaque control. The decision making for the choice of treatment depends on the following factors –

- A. Tooth and soft tissue anatomic factors
- B. Gingival phenotype
- C. Vestibular depth
- D. Amount of keratinized tissue quantity/ quality for esthetic or functional reasons
- E. Esthetic demand of the patient

The following are the surgical approaches for the management of multiple teeth with gingival recession –

- Coronally Advanced Flap (CAF, Norberg)
- Envelope CAF (Zucchelli and de Sanctis M)
- Tunneling (Allen)
- Modified Coronally Advanced Tunneling (MCAT, Aroca et al)
- VISTA (Homayoun H. Zadeh)
- Pinhole Surgical Technique (PST , John Chao)

Rationale behind VISTA technique includes raising a full thickness subperiosteal tunnel including the periosteum as a part of the overlying tissue , exposing the facial osseous plate as well as root dehiscences if any , as opposed to other techniques such as a CAF which includes raising a split thickness flap using a scalpel. Flap thickness preservation and the presence of the periosteum in part of the flap play a fundamental role in obtaining complete root coverage. A single vestibular incision can give access to a whole area using the VISTA approach, giving visual access

to the underlying alveolar bone and root dehiscences. When the flap is advanced coronally, careful subperiosteal dissection lessens the stress on the gingival border. By eliminating papillary reflection, the interdental papillae's anatomical integrity is also preserved.

VISTA set of instruments

1. A set of 6 elevators (Figure 10) are designed to create a subperiosteal tunnel beneath mucosa, using a vestibular access. The elevators allow efficient tunnel elevation in the vestibular region, under gingival margins and under interproximal tissues. VISTA A1/2 : vestibular area, B1-2": Attached gingiva and C1-2 : interdental papillary region
2. Heavy design of instruments improves stability n prevents accidental slippage. The ergonomic design of the “Control Grip” prevents sliding fingers during application of force in tunnel elevation.
3. The **tips** curve toward bone to avoid puncturing tissue inside the tunnel and are square and sharp for efficient detachment of periosteum from bone
4. The **shank angles** allow access to various anatomic locations around curvatures of the jaws.
5. The shanks are black or dark blue colored which allows for easy visibility through the tunnel.

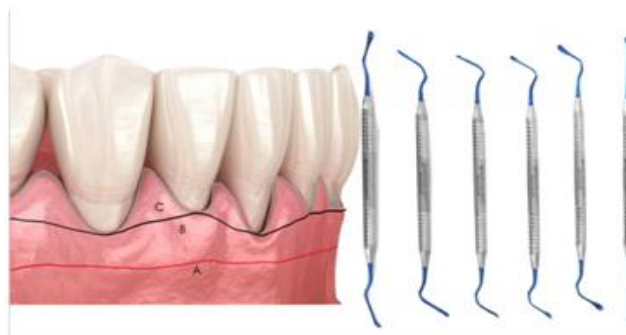
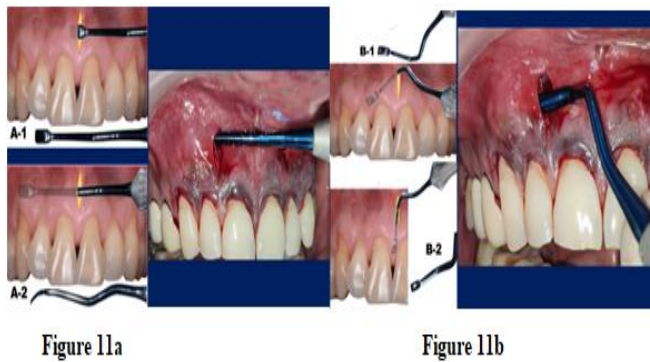


Figure 10



We begin elevation of a subperiosteal tunnel using **VISTA-A1** elevator.(Figure 11a) Elevator is oriented with the concave side and sharp tip facing bone. The leading edge of each elevator has to remain in contact with bone throughout tunnel elevation.The **S-shaped** end of **VISTA-A2** elevator can be used for tunnel elevation in areas apical to the MGJ. The **C-shaped** end of VISTA-A2 elevator can be used when the

tunnel is extended beyond the distal aspects of canines. **VISTA-B1** (Figure 11b) elevator can be used to extend the tunnel from the vestibular side coronal to the mucogingival junction.**VISTA-B2** elevator can be used to extend the tunnel to interproximal area beneath the papilla (in the vicinity of the initial incision) (up to 2-3 teeth away).

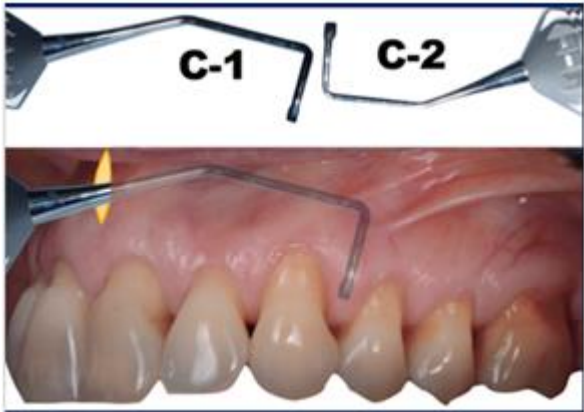


Figure 11c

VISTA-C1 and C2 elevators are well-suited to reach interproximal area of teeth that are further away from initial access incision. (Figure 11c) In areas with relatively low tension during coronal advancement of gingival margin (such as lateral incisor), a single loop suture can be used. Placement of the suture is preferably done in keratinized gingiva,

approximately 3mm apical to the gingival margin with the knots positioned so that when the gingival margins are coronally positioned, the knot will be 3mm coronal to the new gingival margin. For wider teeth (central incisor), use double-mattress suture. This helps to distribute the tension of the coronal advancement to four suture threads. 6.0 polypropylene

(or other monofilament) suture with 13mm 3/8 needle

is ideal for this suture technique.(Figure 12)



Figure 12

The results of the present case study suggest that PRF can produce predictive root coverage with VISTA technique effectively. Although VISTA has been applied in other regions, its application is most advantageous in the esthetic zone.

CONCLUSION

As a result, this technique can be used successfully to treat multiple gingival recessions as an alternative to some of the drawbacks of the current techniques, such as scar formation at the recipient site as a result of surface incisions and morbidity associated with harvesting autogenous donor tissues. It is possible to demonstrate the predictability of this treatment outcome in numerous recession abnormalities with additional clinical data and long-term follow-up.

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