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Research Article

A New Method for Palatal Wound Dressing from Different Perspective of Wound Healing and Pain Assessment: A Case Series

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Abstract

Aim: To evaluate the donor site (palate) wound healing and pain assessment after free gingival graft (FGG) harvesting after using the sutured Ora-aid wound dressing.

Method: Seven patients had been enrolled at this study, requiring soft tissue augmentation for different purposes. The palate had been covered with Ora-aid with additional fixation by 5/0 prolene suture material, using horizontal figure 8 suture technique instead of acrylic palatal stent. Patients were observed for 14 days, the assessed parameters were: the early palatal wound healing, direct visual assessment of edema, suppuration, hemorrhage and necrosis, pain using the visual analogue scale (VAS) and patient satisfaction through direct communication with the patient.

Results: All the enrolled patients showed a significant improvement of wound healing parameters. They stated a lower pain perception, less pain killer consumption and higher willingness for retreatment if indicated. No post-surgical complications were recorded.

Conclusion: The sutured Ora-aid can present a very nice alternative to the traditional acrylic stent, especially if its use is complicated, giving the same preferable results giving by the stent.

Keywords: *Soft Tissue Graft; Palatal Graft Harvesting; Palatal Stent; Ora-Aid; Suturing*

Introduction

Soft tissue augmentation has long been performed for management of mucogingival problems, as for increase the deficient keratinized tissue around teeth and implants, also in case of gingival recession for root coverage [1,2]. One of the preferable sources for autogenous soft tissue graft harvesting is the palate. It represents an available site for soft tissue graft harvesting, providing reasonable surface area for graft harvesting bilaterally if indicated, in comparison to tuberosity and edentulous ridge [3].

The main problem that face the surgeon with the patient at this procedure is the postoperative discomfort at the palatal donor site. Adding to the other complications that may occur as secondary bleeding, swelling and necrosis [3]. Many techniques have been introduced to manage such complications such as using acrylic palatal stent, cyanoacrylate wound dressing, platelet rich fibrin (PRF) with suturing, collagen sponge with suturing and flowable composite. All those means had shown their efficacy, with more superior result for the palatal stent [4-6].

According to recent literatures, although the palatal stent whatever the type of material used for fabrication as acrylic or ethylene vinyl acetate (EVA) is considered the best method for palatal wound dressing after soft tissue graft harvesting [7], but sometimes we face some troubles with some patients to make it for them, as patient with high gag reflex tendency or the incorrect fabrication by the laboratory with no time for adjustment or patient undergoing orthodontic treatment will make impression taking for palatal stent fabrication is difficult.

A new method for palatal management after soft tissue graft harvesting is Ora-aid, it is a mucous adhesive periodontal dressing, composed of two layers, inner adhesive water soluble hydrophilic layer with strong adhesive ability with saliva for attachment up to 10 hours and outer water insoluble polymer for protection from external stimuli as infection, trauma or heat [8]. It is easy to be trimmed to be adapted to the wound size. The excesses of blood and saliva should be removed by gauze before placing it, then adaption of the band for 5 - 10 seconds with finger pressing should be done [9] (Figure 1).

Figure 1: *Ora-aid in place.*

It has many advantages as, it produces less pain and discomfort for the patient than the other dressing types, preference to the operator "handling manipulation, less chair time, fast working time "adhesive layer has adhesion effect when it comes to the oral cavity, it contain vitamin E which aid in soft tissue healing and superior esthetic because transparency of the dressing [9].

The main problem for Ora-aid is the short term adhesiveness (not more than 10 hours), which may jeopardize the required effect of palatal protection against pain, bleeding and necrosis. So, to get more benefit of such useful device, using mean of fixation like suturing may afford more benefits of the external insoluble polymer layer for palatal guarding [8,9] (Figure 2).

In this trial, we decide to fix the Ora Aid with suture, using 5/0 prolene suture to perform slinged horizontal figure eight suture technique, evaluated for which time it will be stable below the suture and how that will affect the healing and postoperative pain sensation.

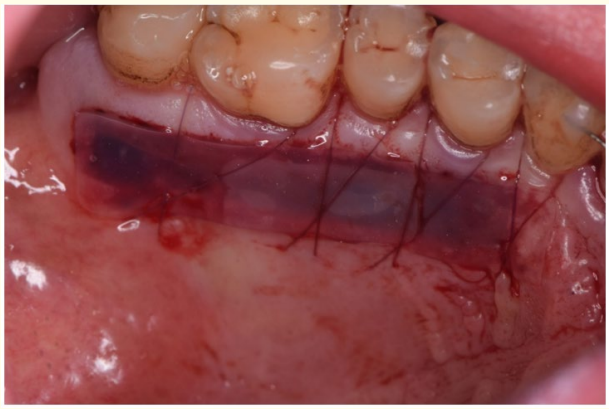

Figure 2: *Slinged horizontal figure eight suture technique, to fix ora-aid patch.*

Materials and Methods

Study population and including criteria

A total of seven patients were included in the study, four females and three males, with an average age of 20 - 40 years. Patients who are indicated for soft tissue augmentation procedures, either with root coverage or to increase the deficient keratinized tissue were medically free, non-smokers and with good oral hygiene.

Excluding criteria

Pregnant or lactating females, smokers, patient with untreated periodontal condition and patient with uncontrolled systemic condition.

Surgical technique

After harvesting the palatal soft tissue graft and fixing it at the recipient site, back to the donor site for management, the blood clot should be wiped with gauze, then placement of Ora-aid patch after cutting and adjusting it to fit the wound site size. The dressing was then pressed gently for 10 seconds, to aid its adherence to the wound. Fixation of the patch is then followed, using 5/0 prolene suture, performing slinged horizontal figure eight suture technique (Figure 3 and 4).

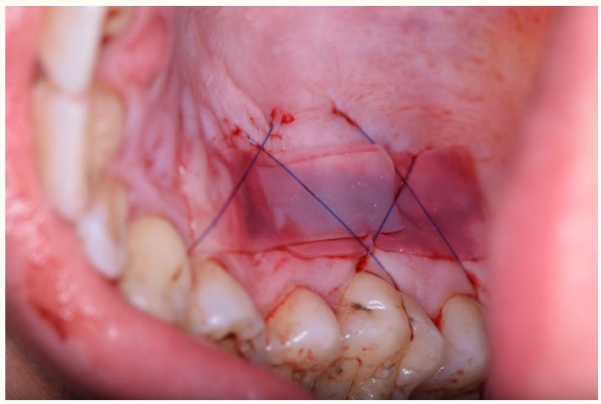

Figure 3: *Ora-aid in place, case 1.*

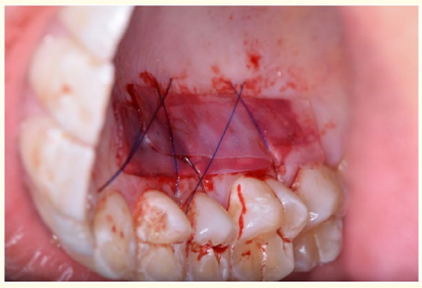

Figure 4: *Ora-aid in place, case 2.*

Postoperative instructions

Patients were instructed to avoid hot and hard food for the next two weeks, not to disturb the wound area. Prophylactic antibiotic was prescribed for 5 days (Amoxicillin 500 mg, 8 hours per day) along with analgesic for 5 days (Ibuprofen 400 mg, twice per day) and mouth wash twice per day for the next 14 days till the time of suture removal (Chlorohexidine 0.12%).

Postoperative assessment

Patients were asked to report the time of shedding of the Ora-aid patch. Photographs of the donor site was taken after 14 days of surgery, at time of suture elimination.

The following parameters were evaluated and recoded at the same day:

1) Pain using the visual analogue scale (VAS) (Figure 5).
2) Time of Ora-aid retention intraoral.
3) Wound healing assessment (Landry., *et al*. 1988).
4) Patient satisfaction through direct communication.

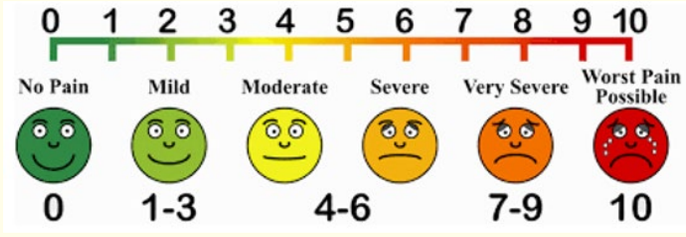

Figure 5: *Visual analogue scale (VAS).*

Results

The visual analogue scale was used to assess the pain immediately after surgery and 14 days later for each participant, and that were the results (Table 1).

Patient	Baseline	14 days
Patient 1	6	0
Patient 2	8	1
Patient 3	7	0
Patient 4	7	1
Patient 5	9	2
Patient 6	6	0
Patient 7	7	0

Table 1: *Assessment of pain by VAS.*

Retention time was ranged between 6 - 9 days, reported by the patient when asked (Table 2).

Patient	Fall out time
Patient 1	6
Patient 2	8
Patient 3	7
Patient 4	7
Patient 5	9
Patient 6	6
Patient 7	7

Table 2: *Assessment of time of Ora-aid patch fall out.*

Wound healing assessment (Landry., *et al*. 1988), this index assessed different aspects of wound healing including response to palpation, granulation tissue formation, incision margins and suppuration, and that were the results (Table 3, figure 6 and 7).

Patient	Baseline	14 days
Patient 1	1	3
Patient 2	1	3
Patient 3	1	2
Patient 4	1	3
Patient 5	1	3
Patient 6	1	3
Patient 7	1	2

Table 3: *Assessment of wound healing.*

Figure 6: *Result after 14 days, case 1.*

Figure 7: *Results after14 days, case 2.*

All the seven patients have reported a high satisfaction with the used fixed Ora-aid patch, that their pain sensation and discomfort were minimal, which made their consumption of analgesics is decreased.

Discussion

The most important part at most of mucogingival surgeries is the palatal donor site. Fearing of discomfort, pain and delayed wound healing make us searching for the best way to manage the donor site after harvesting, with optimum result as much as we can [10]. The reason for delayed healing at the donor site is due to healing with secondary intention. Bleeding, food adherence, tongue movement that may cause trauma, worsen wound healing and may induce secondary bleeding, for all these reasons the use of palatal coverage for wound site protection and help for better recovery [11].

Ora-aid patch is recently introduced to the market as a sticky patch for wound site protection, it is also containing vitamin E, which aid in wound healing and has hemostatic effect too [9]. The problem is the short time of stability of the patch, which still *in situ* for not more than 10 hours, which shorten its efficacy as a wound dressing mean that we need to stay more for wound protection and patient comfort [8].

In this study, we add a suture over the patch to overcome this disadvantage, making the patch in a comparable effect to the best used mean of palatal protection, which is the palatal acrylic stent, especially if there are problems of using the stent as the patient with high gag reflux or improper fabrication of the stent and there is no time for re-make.

In this study, the used suture material with the slinged horizontal figure 8 suture technique, helped the Ora-aid patch to be stabilized for 6 - 9 days post-surgical in place, which extended its superior effect on palatal wound protection, increase patient satisfaction and decrease wound morbidity.

The Landry's wound healing index is quit explicit and takes into consideration several parameters like tissue color, bleeding, granulation tissue and closure of the incision margins. The scores range between 1 - 5 with 1 being very poor to 5 being excellent. In the current case series, the score was 1 at baseline for all cases. This improved significantly to score 3 which translates to good healing, in all but for 2 cases out of 7 on 14th day. The variation in the 2 cases could be explained due to patient related factors.

The quantification of pain is done through VAS scoring. In the present study, all the 7 patients scored at baseline and 14th day. All the baseline scores were high for obvious reasons and there was a significant decrease of scores on the 14th day post-operatively.

Conclusion

In the present case series, utilizing of Ora-aid patch with mean of suture fixation resulted in superior outcomes from the patient's and surgeon's perspective. The post-surgical pain declination and wound healing were moderately improved. On the whole, Ora-aid patch is effective method and has potential for wider usage as a palatal wound dressing material, especially when considering its fixation.

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