CASE REPORT

# An Innovation in Vestibular/Gingival Extension Procedure- A Case Report

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**ABSTRACT**

Vestibular deepening/gingival extension procedures have always been a point of concern for the Periodontist. An innovation in conventional technique has been presented in this article. A combination of conventional vestibular deepening procedure and new suturing method has led to this innovation.

**Key Words:** Innovation, Pterygium, Vestibular Deepening

## INTRODUCTION

The vestibular extension operations for increasing the width of gingiva involves the production of a wound extending from gingival margin to a level some millimetres apical to mucogingival junction.

The primary objective of dental suturing is to position and secure surgical flap to promote optimal healing. When used properly the surgical sutures should hold flap edges in apposition until wound has healed enough to withstand normal functional stress. When proper suturing technique is used a tension is placed on the wound margin so primary intention healing occurs.

Primary wound healing or healing by first intention occurs within hours of surgical incision but if wound edge is not re approximated the healing takes place by secondary intention this results in deepening of sulcus.

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Date of Submission : 10-12-2010
Review Completed : 25-01-2011
Date of Acceptance : 02-02-2011

If surgical wound edges are not properly approximated and are therefore inadequate; the healing will be delayed due to separation of wound edges. In this case healing will be by secondary intention.

The aim of this innovative vestibular extension procedure is to have healing, by secondary intention by giving sutures which does not allow both the edges of epithelium to come in contact during process of healing.

Friedman introduced mucogingival surgeries to describe the surgical procedure to correct the relationship between the gingiva and oral mucous membrane with reference to three areas: attached gingiva, shallow vestibules and frenum interfearing with marginal gingiva.[1]

The first detailed discussion of the rationale and techniques of the emerging field of mucogingival surgery was set forth in 1956 by Goldman *et al*.[2]

The Schluger "pouch" and the Fox "push back" procedures, previously known only through personal communications, were formally introduced into the literature and renamed the "local extension of the vestibular trough" and the "gingival extension operation" respectively. Both procedures introduced bone exposure as an aspect of Periodontics and became basic to subsequent developments in mucogingival surgery.

Many of the procedures described since 1956 have been refinements of previous techniques, designed to avoid the postoperative pain which results when extensive areas of exposed bone are covered only with a periodontal dressing. These refinements endeavored to retain or create a protective cover of mucosa or periosteum for bone which had been exposed for recontouring. One such modification by Ariaudo and Tyrrell[3] combined Naber's repositioned flap with a minimal post-operative exposure of bone.[4,5]

The conventional procedure of deepening the vestibule and placing coe pack for prevention of epithelial re-attachment is a successful procedure and literature shows that it was an excellent procedure for gaining the width of attached gingiva.

## Pterygium surgery

Pterygium (Fig 1) is a beginning of thickening of outer coating (conjunctiva) of eye that grows on to cornea. As pterygium grows it may become red and irritating eventually it may cause visual disturbance by disrupting the normally smooth surface of cornea and in severe condition can block the patients vision altogether.[6]

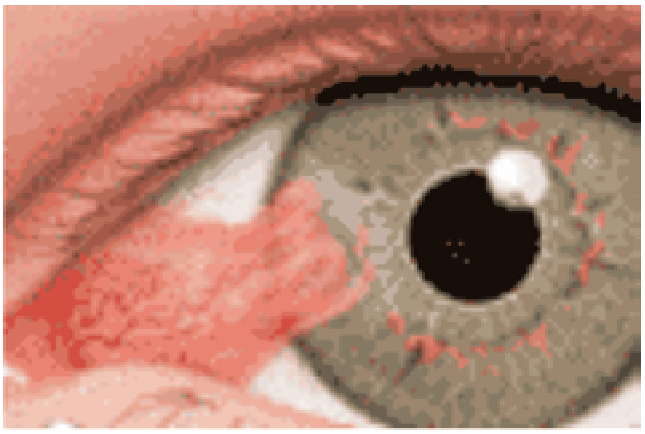

**Fig. 1 Pterygium**

In pterygium surgery the abnormal tissue is removed from cornea and sclera. Though healing occurs over 2 to 4 weeks but unfortunately, the pterygium may grow back in upto 50% of patients. In many cases it grows larger than its original size.

To avoid this surgeons have modified a technique few years back in which pterygium is detached and its direction is changed towards lower eye lid. The tissue held in place by tiny resorbable sutures which dissolve in few weeks. The procedure is called as Pterygoplasty surgery.

In this the pterygium grows away from cornea. Since it grows very slowly, over many years hence no recurrent excision surgery is required (Fig 2).

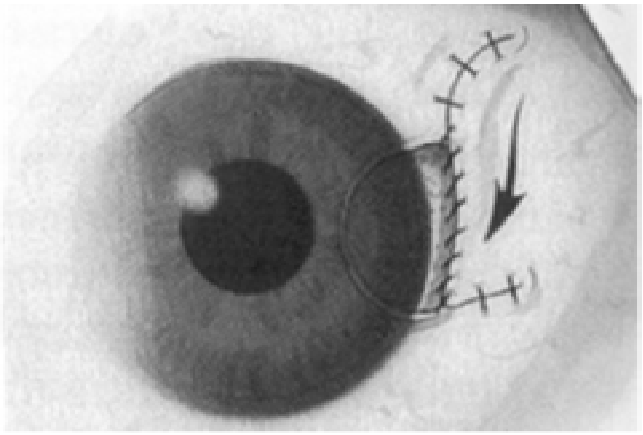

**Fig. 2 Pterygium surgery**

Based on this idea mooted to change the direction of epithelium by changing the direction to avoid the early contact of epithelium and promote healing by secondary intention.

## Basis of the Innovation

The nature of the epithelial cells is to proliferate and crawl to adapt the wound bed giving cover for the new tissue. Epithelial cells advance across the wound site and proliferate at its edges, ceasing movement when they meet in the middle.

The basis of this new technique is not to allow epithelial cells till the secondary intention healing takes place.

## Technique

The continuous suture were used, the suturing procedure is started at mesial or distal aspect of corner of wound by passing needle through external surface of one corner of wound taking it across the wound to another corner of wound.

The needle is passed through the buccal flap of wound by everting the epithelium of margin of wound inward and is brought back to starting point (Fig 3).

The position of flap is adjusted and secured in its proper position by closing the suture.thus only one knot is needed (Fig 3).

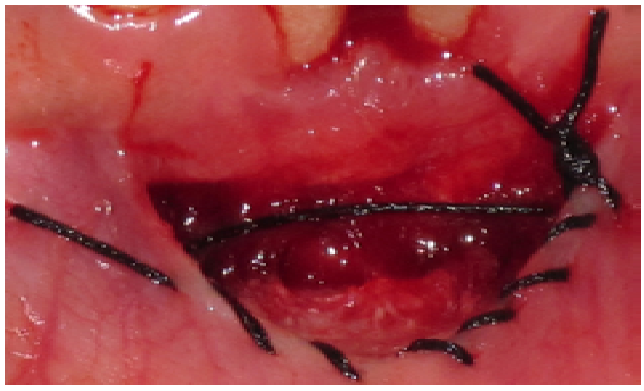

**Fig. 3 Innovation**

Once healing by secondary intention is completed the suture is removed and epithelium is allowed to proliferate and meet another.

### CASE REPORT

A female patient aged 34 year reported to Department of Periodontics Saraswati Dental College and Hospital Lucknow, with the chief complaint of soft tissue loss in relation to lower front teeth.

On examination it was seen that patient had Millers grade II recession in relation to 31 and 41 regions and the vestibular depth was inadequate (Fig 4).

**Fig. 4 Pre operative photograph showing inadequate vestibular depth**

Thorough scaling and root planing was done and patient was prepared for vestibular deepening surgery.

For the vestibular deepening a semilunar incision was given and sutures were placed (Fig 5) in the same fashion as described earlier so as to change the direction of epithelium inwards and wound heal by secondary intention.

**Fig. 5 Post operative photograph showing semilunar incision and sutures**

Patient was allowed to leave after the bleeding was stopped. Oral hygine instruction and medications which included antibiotics and analgesics and patient was again recalled after 7 days and suture removal was done after 14 days.

After 14 days (Fig 6 and 7) the sutures were removed and irrigation was done and patient was again recalled after 20 days.

Uneventful healing by secondary intention was seen within 1 month (Fig 8) and adequate amount of attached gingiva and vestibular depth was gained.

**Fig. 6 Postoperative 7 days**

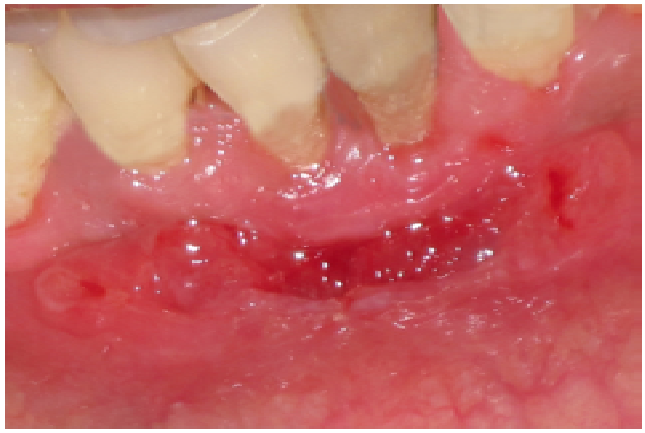

**Fig. 7 Suture removal 14 days**

**Fig. 8 Healed site and Gained Vestebular Depth**

## DISCUSSION AND CONCLUSION

Studies suggest that adequate width of attached gingiva is needed for the proper maintenance of oral hygiene. Any discrepancy in vestibular depth interferes in proper oral hygiene maintance and may cause various mucogingival problems.

The ultimate goal of this case report is to provide adequate width of attached gingiva. The conventional methods were also successful in gaining the adequate width but with this innovation as the epithelium from the buccal (lip) side of flap is changed the epithelium does not attach to the original position , the suture which pass through the centre of the incision guides the re attachment of the epithelium which is by secondary intention. Thus with combination of these sutures and conventional vestibular deepening method has led to an innovation in field of Periodontal Plastic Surgery as mucogingival problem faced by the patient and surgical procedure by this method has proved to effective in gaining the vestibular depth and width of attached gingiva.

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