

Edlan-Mejchar Vestibular Deepening in a Failing Implant Case

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ABSTRACT

Necessity of the width of keratinized mucosa around implants has been a topic of much controversy. There have been reports both supporting and against the idea. This is a case report describing an Edlan-Mejchar vestibular deepening procedure done with respect to a mandibular anterior failing implant. The procedure helped in increasing the keratinized mucosa around the implant thus rendering a harmonious soft tissue for healing of the peri-implant mucosa. Based on the findings of the present case it can be concluded that keratinized mucosa around the implant is detrimental in the success of the implant.

Keywords: Edlan-Mejchar vestibuloplasty, Keratinized mucosa, Peri-implant soft tissue.

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INTRODUCTION

Following the placement of an implant/abutment, the soft tissue healing around the implant may be composed of the lining (nonkeratinized) or the masticatory (keratinized) mucosa. The width of attached gingiva around natural teeth was considered important as it was necessary to dissipate the forces of the muscle pull of unattached mucosa and also reduces plaque retention. Also, since it was of keratinized origin it also was thought to be suitable to withstand tooth brushing and masticatory trauma.¹ Lang and Loe in 1972 stated that a minimum of 2 mm of keratinized mucosa is required for adequate soft tissue health.² Later in the early 1980s Wennstrom, Lindhe and Nyman in their studies proved that attached gingiva and its width have little role in the maintenance of periodontal health.³⁻⁵ But these same conclusions cannot be extrapolated to implants as the connective tissue fibers run parallel to the implant surface whereas these fibers are attached to the cementum in case of teeth. Thus there have been controversies over the necessity of adequate width of attached gingiva in case of implants. A recent systematic review by Carlos Brito et al in 2013 concluded that keratinized gingiva is indispensable to maintain peri-implant health.⁶

Edlan-Mejchar procedure is a vestibular deepening procedure which was given by Edlan and Mejchar in 1963.⁷ It is a predictable technique with long-term results. This procedure also appeared to increase the width of the attached

gingiva where other procedures were impracticable due to lack of vestibular depth.

This paper describes the case report of a patient in whom vestibular extension was carried out by the technique described by Edlan and Mejchar to correct a failing implant.

CASE REPORT

A male patient aged 27 years of age came to the department of periodontics with a failing implant with respect to 31 and exposed bone graft and membrane. On history patient revealed placement of an implant 4 months back with exposure of the implant 2 months postoperative for which a second stage surgery was done consisting of bone grafting and membrane placement. On examination the GTR membrane with particulate bone graft material and debris was exposed and slight mobility was noticed with respect to the implant at 31. There was absence of attached gingiva at the site and vestibular depth was assessed to be 2 mm. The treatment plan included first stage surgery which involved debridement of the area. After debridement the dehiscence was appreciated with respect to the buccal cortical plate and exposure of the implant was apparent (Fig. 1). The flap was sutured back to position by releasing the tension on the flap with the help of a horizontal incision (Fig. 2).

The second stage surgery involved the Edlan-Mejchar vestibular deepening procedure which would help increase the vestibular depth and attached gingiva to relieve tension on the marginal gingiva and better adaptation of the soft tissue onto the implant for better peri-implant health.

Prior to the surgical procedure, the distance between the gingival margin and the depth of the vestibule was measured with the help of a William's graduated probe and was assessed to be 2 mm (Fig. 3). The frenal pull on the gingival margin can also be appreciated preoperatively (Fig. 4).

Edlan-Mejchar Procedure

First 2 vertical incisions placed mesial to the mandibular canines and starting at the mucogingival junction extending up to a distance of 10 to 12 mm on to the lower lip. The two vertical incisions were joined by a horizontal incision across the midline (Fig. 5). Then a split thickness flap was elevated separating the labial mucosa from the underlying muscular tissue using sharp dissection. This resulted in a loose flap of labial mucosa with its base on the gingiva (Fig. 6).



Fig. 1: Preoperative after debridement



Fig. 2: 1st stage surgery: frenotomy and interrupted sutures placed



Fig. 3: Three weeks postoperative, soft tissue healing appreciated with 3 mm vestibular depth



Fig. 4: Three weeks postoperative, can appreciate the frenal pull on the marginal gingiva



Fig. 5: The horizontal and vertical incisions placed



Fig. 6: Split thickness labial flap raised

Incision and reflection of the periosteum: the loose flap of labial mucosa was folded upward and a horizontal incision was made on the periosteum extending between the 2 initial vertical incisions mesial to the canines. The periosteum was then separated from the bone with blunt dissection,

forming a second flap with its base on the apical portion of the mandible (Fig. 7).

Transposition of the two flaps: the split thickness flap of labial mucosa was folded back and placed on the bone from which the periosteum had been removed. It was fixed with



Fig. 7: Full thickness mucoperiosteal flap raised



Fig. 8: Labial mucosa adapted and sutured onto the bone

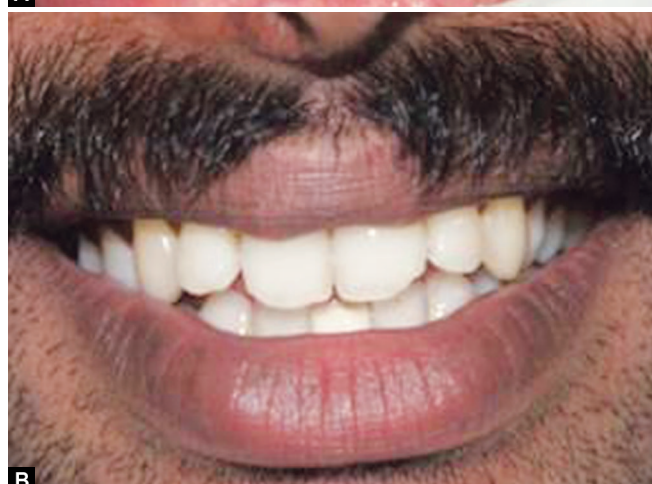


Fig. 9: Three weeks postoperative

interrupted sutures to the inner surface of the periosteum, which had been removed from the bone (Fig. 8).

A periodontal dressing was placed to protect the operated area. Amoxicillin 500 mg TID for 5 days and anti-inflammatory (diclofenac 50 mg) BD for 5 days were prescribed to the patient in addition to chlorhexidine rinses. Other postsurgical instructions included intermittent cold fomentation on the first postoperative day, soft/liquid diet for 1 week, and maintenance of good oral hygiene. The patient recalled in 2 weeks time for review.

Postoperative recall: the 3 weeks postoperative examination revealed excellent healing (by first intention) and a considerable gain in the width of the attached gingiva and depth of the vestibule (up to 8 mm) (Fig. 9). The patient was subsequently placed on a recall program and his periodontal condition was periodically reviewed. No loss of width of the attached gingiva was observed throughout the recall program and prosthetic phase was completed within 2 months time (Figs 10A and B).



Figs 10A and B: Four months postoperative after prosthetic phase

DISCUSSION

The technique used here was a modification of the Kazanjian technique. The advantage of this technique is that the bone is not exposed and there is minimal contraction of the vestibular depth gained and scar formation is minimal. In this case there was an appreciable increase in the vestibular depth up to

7 mm 3 weeks postoperative and the results were consistent 4 months postoperatively. A 5 years follow-up study done by Axel Ergenholtz and Anders Hugoson concluded that there was an average gain of 7.7 mm and insignificant loss of depth during the first 3 months which was followed by a gain during 5 years follow-up.⁸ Though there was an increase in the vestibular depth it is not without drawbacks. The major drawbacks which was observed is the patients complain of stiffness during movement of the lower lip which the patient got accustomed to within 1 month time. Literature also reports about a major drawback of the shortening of the lip,⁸ which was not seen in this case.

With regard to the peri-implant health, the tissues were normal with adequate amount of keratinized mucosa covering the implant. The mobility of the implant had improved. There was postoperative exposure of the implant which was masked with the help of the prosthetic crown.

Thus, based on the findings of the present case it can be concluded that keratinized mucosa around the implant is detrimental in the success of the implant. The technique advocated by Edlan and Mejchar can be used to increase the width of the keratinized mucosa around the implant predictably. Thus improving the overall prognosis.

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