



CASE REPORT

FRENECTOMY WITH LATERALLY DISPLACED FLAP

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ABSTRACT

An aberrant Maxillary labial frenum is capable of creating diastema and recession resulting in compromised aesthetics and function of the patient. Aberrant frena can be treated by frenectomy procedures. The “classical frenectomy” technique is an extensive procedure exposing the alveolar bone and thus leading to scar formation. To minimize these defects, Miller proposed a frenectomy technique combined with a laterally positioned pedicle graft. This technique provides closure across the midline and healing by primary intention and resulted in aesthetically acceptable results without scar formation. This article is a case report of frenectomy with laterally displaced flap. Key words: Labial frenum, frenectomy, laterally displaced flap, diastema.

INTRODUCTION :

The frenum is a mucous membrane fold that attaches the lip and the cheek to the alveolar mucosa, the gingiva, and the underlying periosteum¹. Placek et al in 1974 have classified the labial frenal attachments as mucosal, gingival, papillary and papilla penetrating. Out of these papilla and papilla penetrating types of frenums are considered aberrant. The aberrant frenum is characterized as pathogenic and is indicated for removal when the attachment causes gingival recession or reduces the width of attached gingiva and a midline diastema.²

There are numerous surgical techniques for the correction of aberrant frenum. The commonly used technique is the “classical frenectomy “by Archer³ and Kruger⁴, where the complete frenum is excised. But it has a major disadvantage of scarring in the midline which might be unaesthetic⁵. Miller in 1985 presented a surgical technique combining the frenectomy with a laterally displaced flap. Esthetically acceptable attached gingiva across the midline was attained by laterally positioned gingiva and healing by primary intention. No attempt was made to dissect the trans-septal fibers and hence, interdental papilla remained undisturbed. This article presents a case report of aberrant frenum corrected using frenectomy with laterally displaced flap.⁵

MATERIALS AND METHODOLOGY :

A 15 year old female, referred from the department of orthodontics for frenectomy. The chief complaint was spacing between the front teeth .On general examination the patient was apparently healthy. On clinical examination,aberrant frenum was detected. (fig1). Tension test was positive and hence frenectomy procedure was planned. Written informed consent was obtained from the patient before the surgical procedure.⁵



Fig - 1

Surgical Technique

After local anesthesia, using 2% lignocaine with 1:80000 adrenalin, primary incision was given at the base of the papilla and extended to the depth of vestibule to separate the frenum from underlying alveolar mucosa (fig 2). Any remnant of frenal tissue in the mid line was excised. A vertical incision parallel to the primary incision was given on the mesial side of lateral incisor, 2-3mm apical to marginal gingiva, up to vestibular depth. The gingiva and alveolar mucosa in between these two incisions

were undermined by partial dissection to raise the flap. A horizontal incision was made connecting the coronal ends of the two vertical incisions (fig 3). Flap was raised, mobilized mesially and sutured to obtain primary closure with 4-0 vicryl interrupted suture across the midline (fig 4).⁵

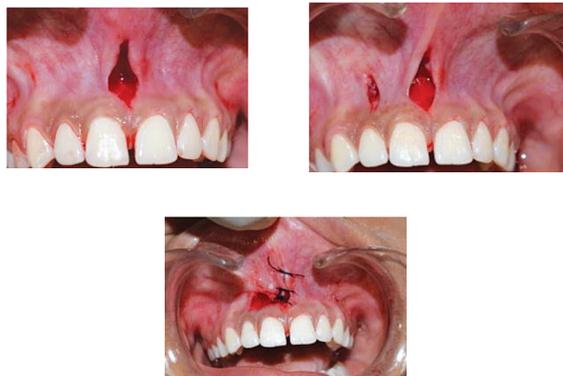


Fig - 2, 3, & 4

Post op care

Patient was instructed not to have hot and spicy foods after the surgical procedure. Antibiotics and analgesics were prescribed for 3 days. Patient was advised to report for next appointment 1 week after surgery for review.⁵

Post op and follow up

Dressing and the sutures were removed 1 week later. A healing zone of attached gingiva, with no loss of interdental papilla was observed. The healing of the surgical procedure was uneventful. Scar formation in the midline could be avoided.

Follow up

The patient was followed for six months and at the end of six months healing was satisfactory, raised red healing ridges appears flattened and scar appears pale red, a wider zone of attached gingiva seen with no scarring in the midline. The colour matched well with the adjacent tissue. No loss of interdental papilla was observed.



Fig - 5

RESULTS

Healing was uneventful with formation of wider zone of attached gingiva, good colour match, and interdental papilla remained undisturbed. Hence the Millers technique can be used as an effective means to eliminate the pathological high frenum and also maintain an esthetic outcome

DISCUSSION

The concept of management of abnormal frenal attachment started from Classical frenectomy technique by Archer to modern concepts by Edwards. To evade the formation of scar and to facilitate healing, application of laser and soft tissue grafts helped in evolving the newer frenectomy procedures.³

Vestibular depth, attached gingival zone, interdental papilla and midline diastema are the features that help in assessment of a frenum. An adequate zone of attached gingiva gives an aesthetically pleasing appearance and also help in the avoidance of recession which necessitates removal of the same³

NirwalAnubh et al⁶ performed frenectomy using laterally displaced pedicle graft achieved esthetically pleasing result without scar formation in the midline and there was no loss of interdental papilla. In the case of our patient too we could achieve the same with good colour match.

Krishna Chaubey et al⁷ also evaluated the frenectomy procedure using lateral pedicle graft also showed the same result with a scar free esthetic zone without loss of interdental papilla was similar to our present study.

Ameet Mani et al⁸ and Devishree et al⁹ in their studies using lateral pedicle frenectomy also observed that healing by primary intention did not cause scarring after healing in the midline¹⁹.

HungundS et al¹⁰ in his study compared the classic frenectomy procedure with unilateral and bilateral displaced flap and concluded that the classic frenectomy failed to provide pleasing esthetic result whereas laterally displaced pedicle flap achieved

the same with no scar formation and without loss of interdental papilla.

In Miller's technique during healing, there is a continuous band of gingiva across the midline rather than unaesthetic scar and transeptal fibers are not disrupted surgically. This avoids trauma to interdental papilla.¹¹

In the case of our patient, post operatively, frenum was assessed for aesthetic appearance by using a Vancouver scar index scale. There was a raised red firm scar one month post operatively because of maximum collagen deposition which gradually turned to flat and pale appearance on healing after six month. Assessment of Pain was done using the Visual analogue scale during and after 24 and 72 hrs. Mild to moderate pain was there during and soon after the procedure. Post operative review after 2 days reveals absence of pain in the surgical site.¹²

Edward et al¹³ suggested the frenectomy procedure has to be carried out before the orthodontic closure since the convoluted and compressed fibers hinder the closure of the diastema. But Miller suggested that frenectomy with laterally positioned pedicle flap was to be performed after the closure of the diastema and this showed minimal relapse because of newly formed broad attached gingival with collagen fibers which act like a bracing effect and helped in preventing reopening of diastema.⁵

CONCLUSION

Though we achieved clinically and aesthetically acceptable result, the advantages of Millers technique for frenectomy over the classical technique can be better established with a comparative clinical study using both techniques.

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