Research Paper Medical Science

Frenectomy- A Transition Towards Better Function And Aesthetics

* Dr.B.M.Bhusari ** Dr. Ridhima Mahajan
*** Dr. Shruti Sura **** Dr. Sameet Patil
***** Dr.Danesh Nair

* Professor and Head Of Department of Periodontology and Oral Implantology, YMT(Yerala) Dental College and Hospital, Navi Mumbai, India.

** Post-Graduate Student, Department of Periodontology and Oral Implantology, YMT (Yerala) Dental College and Hospital, Navi Mumbai, India.

*** Post-Graduate Student, Department of Periodontology and Oral Implantology, YMT (Yerala) Dental College and Hospital, Navi Mumbai, India.

**** Post-Graduate Student, Department of Periodontology and Oral Implantology, YMT (Yerala) Dental College and Hospital, Navi Mumbai, India.

***** Post-Graduate Student, Department of Periodontology and Oral Implantology, YMT (Yerala) Dental College and Hospital, Navi Mumbai, India.

ABSTRACT

The frenum is a fold of mucous membrane that attaches the lip and the cheek to the alveolar mucosa, the gingiva, and the underlying periosteum. The frenum may jeopardize the gingival health when they are attached too closely to the gingival margin, either due to an interference in the plaque control or due to a muscle pull. In addition to this, the maxillary frenum may present aesthetic problems or compromise the orthodontic result in the midline diastema cases, thus causing a recurrence after the treatment. An abnormally placed frenum also hampers prosthetic rehabilitation. The management of such an aberrant frenum is accomplished by performing a "frenectomy". The present article is a compilation of a series of clinical cases of pre-orthodontic, pre-prosthtic frenectomy and frenotomy approached by various techniques.

Keywords : frenum, gingival health, aesthetic problems, pre-orthodontic, pre-prosthetic frenectomy, frenotomy

Introduction:
A frenum is an anatomic structure formed by a fold of mucous membrane and connective tissue, sometimes muscle fibers. The superior labial frenum is triangular in shape and attaches the lip to the alveolar mucosa and/or gingiva. Depending upon the extension of attachment of fibers, frena have been classified as:[1,2]

1. Mucosal - when the frenal fibers are attached up to mucogingival junction;
2. Gingival - when fibers are inserted within attached gingiva;
3. Papillary - when fibers are extending into interdental papilla; and
4. Papilla penetrating - when the frenal fibers cross the alveolar process and extend up to palatine papilla.

The pathology associated frena among these are the papillary and papilla penetrating ones. In most of the cases this has lead to the following complications- papillary loss and recession, formation of diastema , difficulty in maintaining oral hygiene, alignment of teeth, and psychological disturbances to individual.[3,4]

Abnormal frena are detected visually by using the tension test wherein the lips is pulled outwards to see the movement of papillary tip or blanch produced due to ischemia of the region.[5] Mille recommended that the frenum should be called as pathogenic when it is unusually wide or there is no apparent zone of attached gingiva along the midline or when there is a movement of the interdental papilla when the frenum is extended.[6]

In such cases, it is necessary to perform a frenectomy for aesthetic, psychological, and functional reasons. There are numerous surgical techniques for the removal of frenum like

1. Classical frenectomy by Archer[7] and Kruger,[8]
2. Millers technique
3. Z-plasty
4. V-Y Plasty
5. Diffenbach V plasty
6 Frenectomy using electrocautery

Following is a case series of frenectomy :
CASE1:
A 27-year-old male had a chief complain of malaligned teeth and was referred to the department of Periodontia from de-

partment of Orthodontia for abnormal Frenal attachment in maxillary arch in upper mid line region. On clinical examination, a papilla-penetrating upper mid frenum was found . After local anesthesia, the frenum was held with a hemostat and horizontal incisions were placed using #15 blade from above and below the hemostat. The triangular resected portion of the frenum was removed with the hemostat, thus exposing the underlying brush like fibrous attachment to the bone. Following this, the fibres were separated and the bone dissected bluntly. The incision was extended apically up to the vestibular depth to completely separate the frenum from alveolar mucosa. The 3-0 silk interuppted sutures were placed (Fig-1,2,3,4) 1The surgical field was cleaned and packed with gauze sponges until bleeding stopped. Thereafter the periodontal pack was applied. The patient was put on analgesics and antibiotics to manage pain and prevent infection. The patient was recalled after 7days for suture removal and healing assessment.







A. Pre- Operative B. Intra operative C. Post Operative

CASE 2:

A 19-year old patient came to the Department of Periodontics with the chief complaint of difficulty in speech. It was diagnosed as ankylosis of the tongue and lingual frenectomy was advised. Bilateral local infiltration was given in the lingual mucosa. An infiltration was also given into the substance of the tongue at the tip of the tongue. A traction suture was placed at the tip of the tongue with which the tongue was firmly retracted. The first line of horizontal mattress sutures, using 3-0 silk suture, was placed just below the ventral surface of the tongue. Three sutures were placed extending from the origin to the insertion of the frenum on the ventral surface of the tongue. A second line of sutures was placed several millimeters below the first one. This second line of sutures was placed loosely and superficially through the mucosa. (fig. 3) The frenum was held with a hemostat. (fig. 4). A #15 blade was used to sever the frenal attachment by a transverse incision above and below the area held by the hemostat (fig. 5). As the area was pre-sutured there was minimal bleeding. No dressing was placed. The patient was put on analgesics and antibiotics to manage pain and prevent infection. Sutures were removed after 1 week and healing was evaluated.





A.Pre- Operative B. Post Operative

CASE 3

A 25- year old male reported to the Department of Periodontics with the chief complaint of Starting at the apex using a 15 # blade the frenum was released from each side. The incisions at the base were extended adequately to allow proper tapering of the flap. All tissue tags were removed. The periosteum over the alveolar process was scored using the scalpel to disrupt any residual muscle fibres and promote scarring.

The remaining alveolar mucosa just below the attached gingiva was removed. The underside of the lip was sutured with 3-0 Silk sutures and then sutured down to the base. The patient was put on analgesics and antibiotics to manage pain and prevent infection. A periodontal pack was applied. Sutures were removed after 1 week and healing was evaluated.



A.Pre- Operative



B. Post Operative

Conclusion:

Thus frenectomy, an aethetic approach, done to correct a mucogingival problem aims at restoring the proper form and function of the periodontium. Being a less invasive procedure, it not only provides a proper contour and relation with the surrounding mucosa but also prevents the further loss of the tissue, thus increasing the prognosis and longevity of the teeth involved.

REFERENCES

1. Chaubey KK, Arora VK, Thakur R, Narula IS.(2011) Perio-esthetic surgery: Using LPF with frenectomy for prevention of scar. J Indian Soc Periodontol 15:256-9.| 2. Placek M, Miroslavs, Mrklas L (1974). Significance of the labial frenal attachment in periodontal disease in man. Part 1; Classification and epidemiology of the labial frenum attachment. J Periodontol 45:891-4| 3. Dewel BF.(1966)- The labial frenum, midline diastema and palatine papilla: A clinical analysis. Dent Clin North Am ;175-84. | 4. Díaz-Pizán ME, Lagravère MO, Villena R. (2006) - Midline diastema and frenum morphology in the primary dentition. J Dent Child (Chic) ;26:11-4.| 5. Gottsegen R.(1954) Frenum position and vestibule depth in relation to gingival health. - Oral Surg ;7:1069-72.| 6. Miller PD Jr.(1985) - The frenectomy combined with a laterally positioned pedicle graft; functional and aesthetic consideration. J Periodontol;56:102-6.| 7. Archer WH (editor). Oral surgery - a step by step atlas of operative techniques, 3 rd ed. Philedelphia: W B Saunders Co; 1961. p. 192.| 8. Kruger GO (editor). Oral surgery, 2 nd ed. St. Louis: The C.V. Mosby Co; 1964. p. 146.| 2. Placek M, Miroslavs, Mrklas L (1974). Significance of the labial frenal attachment in periodontal disease in man. Part 1; Classification and epidemiology of the labial frenum attachment. J Periodontol 45:891-4| 3. Dewel BF.(1966)- The labial frenum, midline diastema and palatine papilla: A clinical analysis. Dent Clin North Am ;175-84. | 4. Díaz-Pizán ME, Lagravère MO, Villena R. (2006) - Midline diastema and frenum morphology in the primary dentition. J Dent Child (Chic) ;26:11-4.| 5. Gottsegen R.(1954) Frenum position and vestibule depth in relation to gingival health. - Oral Surg ;7:1069-72.| 6. Miller PD Jr.(1985) - The frenectomy combined with a laterally positioned pedicle graft; functional and aesthetic consideration. J Periodontol;56:102-6.| 7. Archer WH (editor). Oral surgery - a step by step atlas of operative techniques, 3 rd ed. Philedelphia: W B Saunders Co; 1961. p. 192.| 8. Kruger GO (editor). Oral surgery, 2 nd ed. St. Louis: The C.V. Mosby Co; 1964. p. 146.|