VOLUME - 9, ISSUE - 7, JULY - 2020 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Periodontology

FRENECTOMY: A CASE REPORT

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ABSTRACT Frenum is a mucous membrane fold that helps in the attachment of the lip cheek to the alveolar mucosa, gingiva, and the underlying periosteum. The frena jeopardize the gingival health if its attached too closely to the gingival margin which is either due to an interference in the plaque control or due to any muscle pull. In addition, the maxillary frenum presents aesthetical problems or it may compromise the orthodontic resulting in the midline diastema, thus causing recurrence after the treatment. The management of such an aberrant frenum is usually accomplished by performing a method called frenectomy.

KEYWORDS : Diastema, Frenum, Orthodontic, Frenectomy

INTRODUCTION:

Aesthetical concerns have led to an increase in the importance of seeking dental treatment for the purpose of achieving a perfect smile. This continuing presence of diastema between the maxillary central incisors in adults has often been considered an aesthetic problem. The presence of an aberrant frenum which being one of the aetiological factors for the persistence of a midline diastema has made the focus on the frenum more essential[1].

The frena also can jeopardize the gingival health by causing gingival recession when its attached too closely to the gingival margin which is either mainly because of an interference with the proper placement of a toothbrush or it can be through the opening of the gingival crevice due to muscle pull[2].

Fig:1 Gingival type of frenal attachment

Knox and Young histologically had studied the frenulum, and they have reported the presence of both elastic and muscle fibres (Orbicularis oris – horizontal bands and oblique fibres). However, Henry, Levin and Tsaknis have found considerably a dense collagenous tissue and elastic fibres with no muscle fibres in the frenulum.

The maxillary labial frenum develops as a post-eruptive remnant of the ectolabial bands which connects the tubercle of the upper lip to the palatine papilla.When two central incisors erupts, there is no deposition of bone inferior to the frenum which results in a V-shaped bony cleft between the two central incisors and an abnormal frenum attachment. The mandibular frenum is considered to be as an aberrant when it is associated with a decreased vestibular depth along with an inadequate width of the attached gingiva.

Classification[3]

The labial frenal attachments are classified as mucosal, gingival, papillary and papilla penetrating, by Placek et al (1974).

1. Mucosal – when the frenal fibres are attached to the mucogingival junction.
2. Gingival – when the fibres are inserted within the attached gingiva.
3. Papillary – when the fibres extends into interdental papilla.
4. Papilla penetrating – when frenal fibres cross alveolar process and extends to the palatine papilla.

CASE REPORT:

A 20-year-old male patient reported to the Department of Periodontology, BRS Dental College & Hospital, Panchkula, having a chief complaint of spacing between the upper two central incisors. On clinical evaluation, an aberrant frenal with inadequately attached gingiva was present, causing a midline diastema. This was accompanied by a flattened papilla with the frenum closely attached to the gingival margin leading a way to gingival recession and thereby causing a hindrance in maintaining the oral hygiene. A tension test as performed which came out be positive as it described the movement or displacement of marginal gingiva when tension is applied to the lip in an outward, downward & lateral direction. After a proper case history was taken, phase I therapy was carried out followed by frenectomy using a z plasty technique.

Armamentarium – Scalpel blade no.15, gauze sponges, tissue forceps, suture pliers, 5-0 vicryl sutures, scissors, and a periodontal coe-pak dressing.

A case of a hypertrophic attached type of frenal attachment was operated by using Z-plasty technique. The area was anaesthetized with a local infiltration by 2 % lignocaine with 1:80000 adrenaline. The length of the frenum was incised with the help of a scalpel at each end, limbs were at an angle between 60° and 90°. The incisions were made in equal length with that of a band. By using a fine tissue forcep, care was taken so as to not damage the apices of the flaps and then the submucosal tissues were dissected beyond the base of each flap making them into this loose non-attached tissue planes. In addition to this, a double rotation flaps which were at least 1 cm long were also obtained and the resultant flaps were created such as it were mobilized and transposed through 90° for closing the vertical incisions horizontally. Absorbable 5-0 vicryl sutures were placed, first through the apices of the flaps, to ascertain the adequacy of the flap, further repositioned and then evenly spaced along the edges of the flap so as to close the wound along the cut edges of the attached mucoperiosteum and the labial mucosa. A periodontal dressing was also placed. After a week, dressing is to removed as the remnants of sutures were left, as resorbable sutures were used while this procedure.

Fig:2 Frenectomy done using z plasty tehnique

Fig:3 Suture placement

Fig:4 Application of a coe-pak

DISCUSSION:

The Z-plasty technique is found to be ideal method for a broad, thick hypertrophic frenum with a low insertion associated with an inter-incisor diastema and also a short vestibule. It helps in achieving both the removal of the fibrous band as well as the vertical lengthening of the vestibule.

Frenectomy is accomplished either by routine scalpel technique, electrosurgery or by using lasers. The conventional technique is the excision of the frenum using a scalpel. However, it carries the routine risk of surgery like bleeding,pain, discomfort and patient compliance.

The use of ;asers and electro-surgery has been proposed for frenectomy4 procedures ,. Researchers have been advocating the use of an electrocautery probe due to its efficacy and also safety of the procedure because it causes mild bleeding and the absence of postoperative complications. However, it is also associated with certain complications which includes burns, risk of an explosion if combustible gases are used, interference with patients using pacemakers and the production of surgical smoke. These complications have not been reported with the new improvement in the electro surgical techniques, like the Argon Beam Coagulation (ABC)[5].

The use of a CO2 laser in lingual frenectomy has been reported as safe and an effective procedure having an advantage of being a shorter duration of the surgery, simplicity in procedure, the absence of postoperative infections, lesser pain or swelling and the presence of a small or absolute no scar formation. A delayed healing is seen as compared to that in the conventional scalpel techniques with a reduced surgical precision resulting in an inadvertent laser-induced thermal necrosis and also photo acoustic injury which are some of the complications associated with lasers. The application of diode and Er:YAG lasers6 in labial frenectomies in infants, and Er,Cr:YSGG laser7 in labial frenectomy seen in the adolescent and also the pre-pubescent populations were reported.

Since the conventional procedure of frenectomy was first proposed, a number of modifications8 of the various surgical techniques like the Miller's technique, V-Y plasty and Z-plasty have been developed to solve the problems caused due to an abnormal labial frenum.

Various Treatment Modalities

Treatment Modality	Clinical Research
Electrosurgery5	Case report and clinical technique: argon beam electrosurgery for tongue ties and maxillary frenectomies in infants and children
Lasers	Application of diode and Er:YAG lasers in labial frenectomy in infants
	Er,Cr:YSGG laser (1.5 W and 20 to 30 pulses per second) labial frenectomy: a clinical retrospective evaluation of 156 frenectomies on 143 children
	A case report of maxillary frenectomy using a carbon dioxide laser in a pediatric patient
	A case report of upper-lip laser frenectomy without infiltrated anaesthesia in a pediatric patient
Miller's Technique9	frenectomy combined with a laterally positioned pedicle graft-functional and esthetic considerations
Z-plasty Technique10	Z-plasty technique, applied in case of hypertrophy of the upper labial frenum

CONCLUSION:

Since an aberrant frenum is removed by any of the modification techniques that have been proposed, a functional and an aesthetic outcome can thereby be achieved by proper technique selection which is highly based on the type of frenal attachment. Though the approaches of not using the traditional scalpel is no more in use, other techniques like electro surgery and lasers are an advancement, still, further

improvements are to be attempted.

REFERENCES:

1. Huang WJ, Creath CJ. The midline diastema: a review on its etiology and treatment. Pediatric Dentistry. 1995;17:171–9.
2. Jhaveri H. Jhaveri Hiral., editor. The Aberrant Frenum. Dr. PD Miller the father of periodontal plastic surgery. 2006:29–34.
3. Dibart S, Karima M. Dibart Serge, Karima Mamdouth. Practical Periodontal Plastic Surgery. Germany: Blackwell Munksgaard; Labial frenectomy alone or in combination with a free gingival autograft; p. 53.
4. Cunha RF, Silva JZ, Faria MD. A clinical approach of ankyloglossia in babies: a report of two cases. J Clin Pediatr Dent. 2008;32:277–82.
5. Verco PJW. A case report and a clinical technique: argon beam electrosurgery for the tongue ties and maxillary frenectomies in infants and children. European Archives of Paediatric Dentistry. 2010 Jan.
6. Gontijo I, Navarro RS, Naypek P, Ciamponi AL, Haddad AE. The application of diode and Er:YAG lasers in labial frenectomies in infants. J Dent Child. 2005;72(1):10–5.
7. Olivi G, Chaumanet G, Genovese MD, Beneduce C, Andreana S. The Er,Cr:YSGG laser labial frenectomy: a clinical retrospective evaluation of 156 consecutive cases. Gen Dent. 2010;58:126–33.
8. Coleton SH. The mucogingival surgical procedures which were employed in re-establishing the integrity of the gingival unit (III). The frenectomy and the free mucosal graft. Quintessence Int. 1977;8(7):53–61.
9. Miller PD. Frenectomy, combined with a laterally positioned pedicle graft-functional and esthetic considerations. J Periodont. 1985;56:102–6.
10. Puig JR, Lefebvre E, Landat F. The Z-plasty technic which was applied to hypertrophy of the upper labial frenum. Rev Stomatol Chir Maxillofac. 1977;78:351–6.