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Conventional Frenectomy- 2 Case Reports

Manisha Daruka[1], Nazar Rana[2], Mayur Kaushik[3], Pragya Singh[4]

[1]Post Graduate Student, Subharti Dental College and Hospital
[2]Associate Professor, Subharti Dental College and Hospital
[3]Professor And Head, Subharti Dental College and Hospital
[4]Post Graduate Student, Subharti Dental College and Hospital

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. An aberrant frenum may results in gingival recession, decreased range of lip movement and involvement of interdental papilla causing a diastema leading to compromised esthetic and functional needs of the patient and they may also interfere with oral hygiene. Maxillary midline diastema is a common esthetic problem of patients which adversely affects body image and self-esteem, especially in adults. Often, patients are more conscious about the spaces between front teeth and seek treatment for the same. One of the commonest reason for midline diastema is aberrant frenum. The muscle pull of the aberrant frenum pushes the central incisors away from each other. Before correcting the space, removal of the cause is of utmost importance. Therefore, frenectomy is performed before proceeding with the space closure treatment. Frenectomy is thus defined as complete elimination of the frenum and its attachment. This article consists of two case reports on classis or conventional frenectomy.

Introduction:
The frenum is an anatomic structure derived from the latin word “fraenum” which is formed by a fold of mucous membrane, connective tissue and sometimes muscle fibres. There are numerous frena which are present in the oral cavity and the most commonly noted frena are the maxillary labial frenum, the mandibular labial frenum and the lingual frenum.[1] The primary function of the frena is to provide stability to the upper and lower lips and to the tongue. Frenum has been classified by Placek et al (1974) depending upon the extension of the attachment fibers as:[2]

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

Papillary and papilla penetrating frena are considered as pathological and have been associated with recession, loss of papilla, diastema, malalignment of teeth, difficulty in brushing and it may also prejudice the denture fit or retention leading to psychological disturbances to the individual.[3] The abnormal maxillary frena can be diagnosed visually by moving the upper lip outwards and downwards. If the gingival margin shows movement or if blanching is seen due to ischemia, then the test is positive and the frenum is said to be aberrant This test is known as the Blanching test or Tension test.

There are various modalities used to excise the frenum, it can be performed by conventional method using blade and scalpel, using soft tissue laser or electrosurgery. Below are the various frenectomy techniques which can be employed:

1. Conventional (classical) frenectomy
2. Miller's technique
3. V-Y plasty
4. Z Plasty
5. Frenectomy by electrosurgrey and Laser

Case report

Two male patients of age 24 and 27 years reported to the Department of Periodontology, Subharti Dental College and Hospital with the chief complaint of spacing between the upper front tooth region. On clinical examination, the frenum was considered papillary and also the tension test was positive and therefore frenectomy procedure was decided. The entire surgical procedure was explained to both the patients and written informed consent was obtained from the patients before the surgical procedure.

Surgical procedure

2% lignocaine with 1:80000 adrenaline was locally infiltrated to anaesthetized the area. Haemostat was inserted to the deepest depth of vestibule. With the help of No. 15 Bard Parker blade, two horizontal incisions were given, one below the haemostat, at the base of frenum and the other above the haemostat (Fig.2,7). The triangular resected frenum was removed and the underlying tissue was exposed (Fig.3,8). Horizontal incision were made to separate the attached fibres with gradually blending of vestibular tissue and 5-0 suture was placed (Fig. 4,9) and the area was covered with Periodontal pack.

The patient was then recalled after 10 days for suture removal. After 10 days satisfactory healing was observed. Both the patients were followed up for a period of 3 months (Fig. 5,10) and significant improvement was observed at the end of 3 months. Patient did not complain of any disturbance in speech and in chewing from front teeth after the removal of high frenum. The overall appearance of the patient's soft tissues, gingiva and superior lip were found to be healthy and esthetic. Both the patients were referred to the department of Orthodontics for further treatment of midline diastema.

Discussion

A harmonious smile accounts for a perfect balance between the pink and white component of oral cavity. It mainly affects the confidence, self-esteem, and esthetics of an individual, which can also have a psychological impact on them.[4] Aesthetic concerns have led to an increasing importance in seeking dental treatment, with the purpose of achieving perfect smile. The continuing presence of a diastema between the maxillary central incisors in adults has often been considered as an aesthetic problem. High attached maxillary frenum is commonly regarded as contributing etiology for maintaining midline diastema, so the focus on the frenum has become essential.[5] The classical technique was introduced by Archer (1961)[6] and Kruger (1964)[7]. This approach was advocated in the midline diastema cases with an aberrant frenum to ensure the removal of the muscle fibres.[8]

A frenum is evaluated in relation to vestibular depth, zone of attached gingiva, interdental papilla, and diastema. If there is an adequate zone of attached gingiva, coronal to the frenum, it is of no clinical

significance. A zone of attached gingiva is considered to prevent recession and it also gives an aesthetically pleasant appearance.[9]

In the present case report, frenum was excised by conventional scalpel technique at the visible region (frenal attachment from interdental papilla until the mucogingival junction). Scalpel technique was followed in the deeper vestibule to prevent greater tissue damage in the interior aspect and for faster healing.

Patient was recalled after 10 days for suture removal. Uneventful healing was observed during the healing phase. Patient was followed up for three months. There was no relapse of the outcome.

Conclusion

Frenectomy should be considered for the esthetics and functional disharmony associated with it. Various techniques can be employed for the same but selection of it according to the type of attachment is important for the achievement of proper functional and aesthetic result. In the present case reports, the papillary frenum was present which was surgically excised using classical conventional technique. This was simple to perform and desirable results were obtained in both the cases with complete patient satisfaction.

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Case 1:

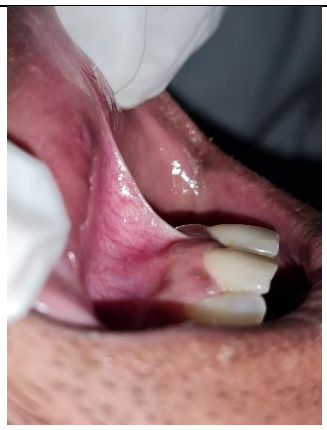

Fig. 1: Pre- Operative View

Fig. 2: Frenum held with haemostat

Fig. 3: Separation of attached fibres

Fig. 4: Placement of 5-0 suture

Fig. 5: Three months follow up

Case 2:

Fig. 6: Pre- Operative View

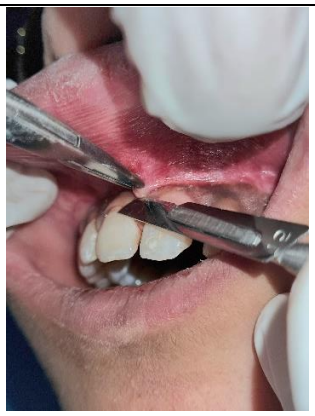

Fig. 7: Frenum held with haemostat

Fig. 8: Separation of attached fibres

Fig. 9: Placement of 5-0 suture

Fig. 10: Three months follow up