



**MANAGEMENT OF GINGIVAL TYPE OF ABERRANT FRENAL ATTACHMENT WITH CLASSICAL FRENECTOMY: A CLINICAL CASE REPORT**

**Unnati Pitale., Sandeep Lachhwani., Pritish Chandra., Hitesh Mankad and Rohit Pandey**

Department of Periodontics, Modern Dental College & Research Center, Indore

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**ABSTRACT**

A frenum is an anatomic structure formed by mucous membrane folds and connective tissue and at times muscle fibres that attach the lips and cheeks to the alveolar mucosa, gingiva and the underlying periosteum. Although it is a normal structure, its presence has been associated with some unpleasant and even pathological situations. Maxillary labial frenum is capable of creating a diastema and subsequent gingival recession, thus affects aesthetics. Several methods to eliminate ectopic frenal attachments have been suggested in literature, including frenectomy and frenotomy. Frenectomy is done by complete elimination of the frenum and its attachments, while frenotomy achieves repositioning of a frenal attachment by incision. This case report is based on the classical technique introduced by Archer 1961 & Kruger 1964. This surgical approach was advocated in the midline diastema cases with an aberrant frenum to ensure the removal of the muscle fibres.

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**INTRODUCTION**

The frenum is a naturally occurring muscle attachment in the form of mucosal fold which attaches the lip & cheeks with the gingiva, alveolar mucosa and underlying periosteum. Sequelae of an abnormal frenal attachment leads to reduced vestibular depth followed by decreased lip movement, associated with gingival recession & loss of attachment. Involvement of interdental papilla between maxillary central incisors, leads to esthetic problem & considered it as an etiological factor for persistence of the midline diastema which compromise the orthodontic treatment outcome & results in recurrence.<sup>1,2,3</sup> Also this condition provokes plaque accumulation and jeopardizes proper tooth brushing, which results loss of attachment & leads to gingival recession. This labial frenal attachment has been classified by Placek *et al* in 1974 as mucosal, gingival, papillary & papilla penetrating, according to its fibers attachments.<sup>4,5</sup>

**Patient Information**

In this present case report a patient was referred from Department of Orthodontics to the Department of Periodontics, Modern Dental college & Research Centre, Indore for management of high frenal attachment between tooth number 11 & 21, which was gingival type of frenal attachment when fibers are inserted within the attached gingival & creates a tension which leads to frenal pull, results in persistence of midline diastema between two maxillary central incisors.

\*Corresponding author: **Unnati Pitale**

Department of Periodontics, Modern Dental College & Research Center, Indore

Six weeks before completion of orthodontic treatment frenectomy procedure was planned for an aberrant maxillary frenal attachment. This allows uneventful healing, formation of healthy tissue and does not prolong orthodontic treatment.<sup>6</sup>

**Clinical Findings & Diagnostic Assessment**

In this case it was observed gingival type of frenal attachment with positive blanch test, while pulling the lips forward & checked the tension with periodontal probe. The Classical technique was chosen for frenectomy introduced by Archer (1961) and Kruger (1964). This approach also advocated in the midline diastema cases with an aberrant frenum to ensure the removal of the muscle fibres which were supposedly connecting the orbicularis oris with the palatine papilla.<sup>7,8,9</sup> In this case due to frenum being gingival type, interdental tissue was salvaged and a more conservative approach was preferred.

**Surgical procedure**

The area was anaesthetized with a local infiltration by using 2% lignocaine with 1:80000 adrenaline. After achieving local anesthetic effect the frenum was engaged with a haemostat [Fig-3] and incisions were placed with surgical blade no. 15 on the upper and the undersurface of the haemostat until it was free [Fig-4]. The triangular resected portion of the frenum was removed. A blunt dissection was done on the bone with curette to relieve the fibrous attachment. The edges of the diamond shaped wound were sutured by using 4-0 black silk, with interrupted sutures to achieve a proper primary closure [Fig-5]. Post operative instructions were given & prescribed medication i.e Diclomol (Diclofenac 50mg and Paracetamol 500mg) tablet twice a day for 3 days for alleviation of pain. Recalled the patient after 24 hours for evaluation & observed

no complications. The sutures were removed 1 week post-operatively & observed proper healing. In this case due to conservative approach, minimal tissue scarring was observed at 1 month [Fig-6,7], demonstrating favourable esthetic outcome along with increase in width of attached gingiva.<sup>8,9</sup>

This gains additive advantages by eliminating tension of muscles & increase in the width of attached gingiva, leads to prevention of recession in the sites. Establishment of self cleansing mechanism can achieve good plaque control by modifying the papillary attachments.<sup>13</sup>



Fig 1a. Pre-operative



Fig 1b. Pre-operative view after midline diastema closure



Fig 2. Tension test positive and blanching seen on frenum pull



Fig 3. Frenum held with haemostat



Fig 4. Frenum excised



Fig 5. Sutures placed



Fig 6. Post-operative view after 15 days



Fig 7. Post-operative view after 30 days

## DISCUSSION

This classical technique of Frenectomy described by Archer & Kruger were routinely used in day to day clinical practice to eliminate all type of attachment of frenum, due to its uncomplicated surgical approach, less time consumption, with excellent primary closure leads to favourable angiogenesis & healing leads to favourable outcome. This is the basic incision for Frenectomy for all types which can modify on the basis of its classification accordingly. Thus in this case a functional and an esthetic outcome has been achieved by a prudent selection of technique.<sup>10</sup>

In this case we have used Frenectomy to relocate the attachment more apically, which leads to an acceptable solution for release the tension, increase the width of attached gingiva to achieve plaque control appropriately & esthetically acceptable after elimination of diastema. The ideal time for this technique is after beginning of orthodontic treatment & about 6 week prior to the appliances to be removed. This achieves healing, tissue maturation & does not prolong the orthodontic treatment, as the diastema was already closed prior to surgery. Literature suggests closing the diastema first by orthodontic treatment & then to perform Frenectomy to prevent any obstacle for diastema closure. After Frenectomy the post surgical scar tissue will hold the teeth in close apposition which helps to maintain the desired results of interdisciplinary approach.<sup>11,12</sup>

## CONCLUSION

While an aberrant frenum removed by classical technique along with various modifications according to the need of cases & combined with orthodontic treatment by closing the midline diastema, can achieve an excellent functional & esthetic outcome.

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