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FRENECTOMY BY PARALLELING TECHNIQUE – A NOVEL AND AESTHETIC APPROACH

Dentistry

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ABSTRACT

An esthetic smile is the foundation of dentistry. It is the main reason to improve appearance, personality, and self-confidence. Smile harmonization is mainly associated with the teeth in relation to soft tissue and muscle attachment. Among these muscle attachments, frenum attachment is the most influencing factor toward esthetics. A frenum is a fold of tissue or muscle connecting the lips, cheek, or tongue to the jaw bone. Certain problems are caused by high frenum such as hindrance in oral hygiene maintenance leading to periodontal disease progression. Frenectomy is a procedure to manage such an aberrant frenum. Certain disadvantages are there with the conventional technique like large rhomboidal wound healing through primary intention was difficult. To overcome the complications of the conventional method, paralleling technique as a conservative approach has been introduced. The aim of this article is to present a case report of frenectomy with paralleling technique, a novel conservative approach.

KEYWORDS

Aberrant frenum, esthetics, Paralleling technique, rhomboidal shape

INTRODUCTION

A frenum is defined as a fold of mucous membrane, embedded with muscle fibers, that attaches the lips and cheeks to the alveolar mucosa and/or gingiva and underlying periosteum.[1]

Based on the extension of attachment of fibers, frenum has been classified as:

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

Among these, the frenum considered pathological is papillary and papilla penetrating frenum. As several problems are seen with abnormal frenum such as papillary loss, recession, diastema, difficulty in brushing, and alignment of teeth.[3]

- Frenectomy is known as the complete removal of the frenum, dissecting its attachment from underlying bone. Several techniques has been proposed for frenectomy.

Diagnosis - The frenum attachment lies at the apical free gingival margin and ends at the mucogingival junction is considered normal.

The Blanch test is used to detect an abnormal frenal attachment. It is done by pulling the upper lip to observe the movement of the papillary margin and holding it until the area becomes ischemic. If the blanch test is positive, a frenectomy is indicated .[7,8]

For frenectomy, several methods have been explained in the literature, namely conventional techniques, electrosurgery, or by the use of a laser. The conventional (classical) method remains the most commonly used procedure in which the excision of fibers, interdental papillae, and fiber detachment from the alveolar bone to the palatine papilla is carried out. This technique results in large rhomboidal shape wound, loss of interdental papillae, and scarring. A longitudinal incision results in delayed wound healing, which may lead to periodontal problems and an unaesthetic appearance .[12]

Therefore modifications to conventional techniques were required to deal with various complications, one of which is the parallel technique.[9,10]

Other conventional techniques that can be done are z plasty, Miller's, and V-Y plasty from a scalpel.

- In this study a more conservative novel technique is described for frenectomy .

Case Presentation

A 23 year male patient reported to department of periodontology at KVG DENTAL COLLEGE AND HOSPITAL , with a chief complaint of unesthetic appearance of his smile. On diagnosis , it was found out that his unesthetic appearance was due to abnormal frenal attachement. papillay penetrating frenum was causing problems for his smile and caused muscle pull creating spacing between teeth.

Presurgical Preparation

The subject was explained about the situation and informed consent was taken before initiation of surgical procedure. The subject was asked to rinse his mouth with 0.2% chlorhexidine digluconate solution before surgery.

Surgical Phase

Asepsis and infiltration anesthesia was performed. 1st step was carried out with upper lip retraction.This was done to tighten the superior labial muscle attachement . An incision was made on both sides of the frenum with a blade #11 followed by a blunt dissection to release the connective tissue attachment to the bone .[6] The incised frenum is removed by making a horizontal incision at the base of the frenum . Bleeding was controlled by application of gauze .

The wound was sutured with interrupted 6-0 nylon sutures to achieve primary closure, followed by periodontal dressing. Post-operative instructions were given. prescription was given to subject , 500 mg of amoxicillin for five days and 500 mg of Mefenamic Acid , and gargling twice a day with 0.2% Chlorohexidine for two weeks.

Pictures

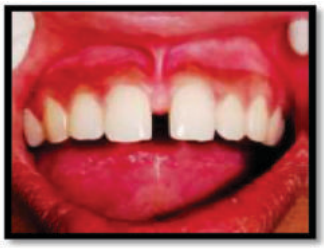

Fig 1 abnormal frenal attachement

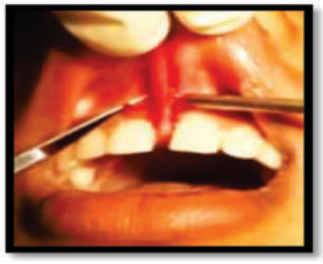

Fig 2 placement of paralleling incision

Fig 3 dissection of frenum from underlying CT

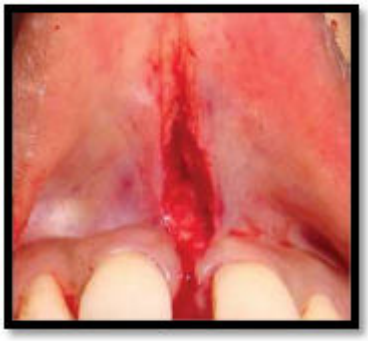

Fig 4 wound after frenum removal

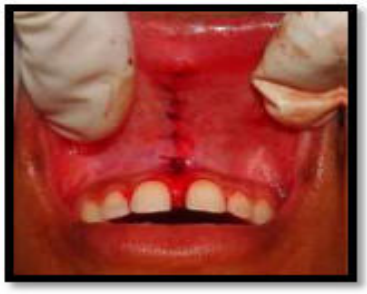

Fig 5 primary closure

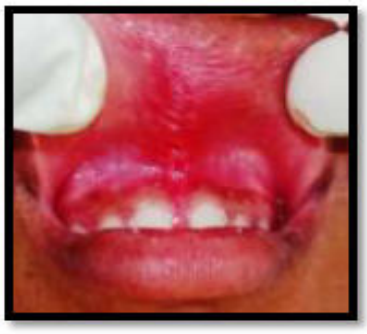

Fig 6 Follow up after 7 days

DISCUSSION

periodontal esthetic surgery has gained popularity, because of its, functional and esthetic results. We have crossed a long journey in the management of aberrant frenum from Archer'sand Kruger's "classical techniques" of total frenectomy to Edward's more conservative approach. Recent techniques include frenal relocation by Z-plasty, frenectomy with soft-tissue graft, electrocautery and laser applications to avoid large diamond-shaped wounds and facilitate healing.[5]

The parallel technique has the advantage of minimizing wound area, reducing bleeding, and preventing scar formation after frenectomy.

We cannot ignore the Complications that arise with conventional techniques in frenectomy, causing large wounds by wide incisions resulting in excessive bleeding during surgery and creating discomfort. To overcome these problems a new paralleling technique was used in our study for frenectomy.

patient treated by paralleling technique had significantly less postoperative pain and functional complication when compared with the conventional technique. the paralleling technique is carried out in a conservative approach that prevents the removal of excess mucosal tissue. chances of recurrence are less in this technique. primary closure and less removal of gingival and mucosal tissues result in less postoperative pain and speech discomfort.

CONCLUSION

The paralleling technique provides better patient perception over conventional in terms of better wound healing, more esthetic, conservative approach, and less discomfort to patients such as pain, and scarring.

The case report, presented here proved that paralleling technique was superior to the conventional technique. Nevertheless, more studies are needed to establish the exact efficacy of paralleling technique used for frenectomy.

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