INTERNATIONAL JOURNAL OF HEALTH & MEDICAL RESEARCH

ISSN(print): 2833-213X, ISSN(online): 2833-2148

Volume 03 Issue 07 July 2024

DOI : 10.58806/ijhmr.2024.v3i07n20

Page No. 531-534

Management of High Frenulum Attachment in Upper Anterior Teeth: A Case Report

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ABSTRACT:

Introduction: Frenulum is a mucous membrane fold that attach lip and the cheek to the alveolar mucosa, gingiva, and underlying periosteum. A frenulum that extends to the gingival margin is pathogenic and indicated for removal. It causes diastema between teeth, gingival recession, difficult to maintain oral hygiene, the attached gingiva is weak, vestibule becomes short. **Objective**: The purpose of frenotomy is to reposition the frenulum attachment therefore improve esthetics smile from periodontal approach. **Case Presentation**: A 23 years old female patient came to RSKGMP Airlangga University with complaints of bleeding gums on the front of the maxillary teeth. On intra-oral examination, a high labial frenulum attachment was found in the mucosal folds. **Case Management:** Asepsis of the surgical area with povidone iodine, local anesthesia in the operating area, Clamp the labial frenulum region that will be incised using an artery clamp, followed by an incision at the top and bottom of the clamp using a 15C blade. Remove the muscle attachment, then suturing the gingiva with 4.0 silk suture, Irrigation with normal saline. Dry with gauze then cover the surgical area with a periodontal dressing (coe- pack). Patient were instructed restrict the movement of the lips and were prescribed antibiotics, analgesics and mouthwash. **Conclusions:** Frenotomy is a potential for treatment of improving periodontal aesthetics.

KEYWORDS: Periodontal Aesthetic, Labial Frenulum, Frenotomy

1. PENDAHULUAN

The frenulum is a fold of mucous membrane that attaches the lips and cheeks to the alveolar mucosa, gingiva and periosteum below.[3] The frenulum in the oral cavity consists of 3 types, namely the labial, lingual and buccal frenulum.[3] The labial frenulum according to its location is divided into superior and inferior labial frenulum.[6] Based on the extension of the attachment fibers, the frenulum types are classified as follows[7]:

1. Mucosal, when the frenulum fibers are attachedabove the mucogingival junction.
2. Gingival, if the fibers enter into the attachedgingiva.
3. Pappilary, if the fibers extend to the interdentalpapilla.
4. Papilla penetrating, when the fibers extend beyondthe alveolar bone and extend to the palatinus.

A frenulum that extends to the gingival margin ispathogenic and is indicated for removal.[2] A high frenulum causes diastema between teeth, gingival recession, difficulty maintaining oral hygiene, weak gingival attachment, shortened vestibule difficulty brushing teeth and in some individuals disturbs aesthetics.[8]

Frenulum can be considered pathogenic and indicated for surgery when2:

1. There is high frenulum attachment, which causes central diastema.
2. There are flat papillae with frenulum attachment close to the gingival margin, which causes gingival recession and makes oral hygiene difficult.
3. There is an aberrant frenulum with inadequateattached gingiva and a shallow vestibule.

A high frenulum can be checked visually bypulling the upper lip to see the movement of the pappilary tip or blanching which causes ischemia in the region. Frenulum with high attachment can be treated with frenectomy or frenotomy procedures.Frenectomy is a procedure to remove the frenulum inits entirety including freeing the underlying muscle fibers, while frenotomy is a procedure to remove partial frenulum tissue or a procedure to relocate the frenulum attachment.[8]

2. Case

A 23-year-old female patient came to Airlangga'sUniversity RSKGMP with complaints that the maxillary front gums bleed easily and the patient complained that the shape of her smile was not the same in the left and right areas, as well as the appearance of deep lip folds when smiling or laughingwhich disturbed her appearance, and wanted to do treatment. On intra-oral examination, a high frenulumattachment was found on the maxillary lip mucosal folds. The blanch test was positive. The patient had no history of food or drug allergy, diabetes mellitus,hypertension, or other systemic diseases.

Figures 1 and 2. Clinical photos and flap design.

3. CASE MANAGEMENT

Before surgery is performed, patient preparation and material preparation are necessary. Patient preparation, namely checking general condition, blood pressure, and informed consent. Phase I periodontal treatment was performed, namely DHE (Dental Health Education), scalling and root planning. One week later, the patient came for control and frenectomy was performed on region 11 21.

Frenotomy management begins with asepsis of the work area, then infiltration anesthesia is performed on the anterior superior alveolaris nerve and incisor nerve. Clamp the frenulum region to be incised using an artery clamp, followed by an incision at the top and bottom of the clamp using a 15 C blade. Free the frenulum muscle attachment using a sharp curette. Remove excess soft tissue from the frenulum at the medial incisive interdental area and perform gingivoplasty as needed. Suture the center of the incision area with interrupted suture using nylon

4.0 thread. Continue with 4 sutures until the entire incision area is closed, followed by irrigation with normal saline solution. Dry with gauze and cover using periodontal dressing (coe-pack).

Figure 3,4,5,6. Extra oral asepsis, Extra intra oral asepsis, Anesthetize the surgical area with lidocaine adrenaline 1cc, Clamp the frenulum region to be incised using artery clamp.

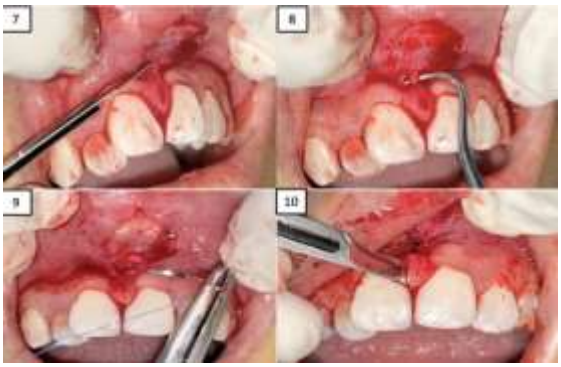


Figure 7,8,9,10. Partial frenulum incision(frenotomy)with a 15c blade, Free the frenulum muscle attachment using a curette, make one interrupted suture using slick 4.0 thread in the center of theincision, Gingivoplasty.

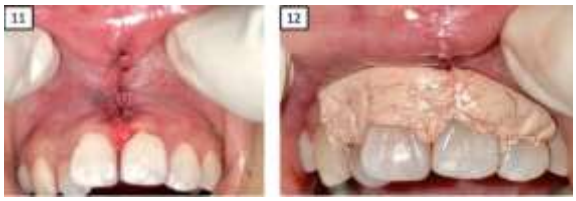


Figure 11, 12. Suturing of the incised area with interrupted suture, application of periodontal dressing(coe-pack).

Post op instructions:

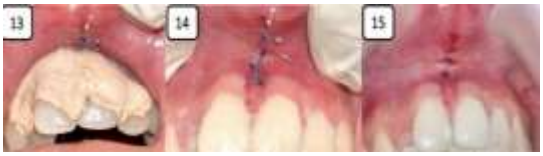
- Avoid spicy, sour, hot drinks.
- Do not brush your teeth in the surgical area.
- Instructions for maintaining OH hygiene
  - If the pack comes off before 3 days immediatelycontact the operator and return to RSGM

Prescribing:

- Amoxcillin tabs 500mg no XV (3 dd I pc)
- Mefenamic acid tabs 500mg no XV (3 dd I pc prn)
  - Clorhexidine gluconate 0.12% gargle Fl. No I (10mlcoll or)

4. RESULTS

One week post frenotomy control found thatthe periodontal pack was still in good condition. After removing the periodontal pack, it was found that the sutures were still complete, reddish, slightly oedematous, and there was debris. Then aff sutures and debridement were performed. One month postoperatively, the patient had no complaints, there was no scar, wound healing was good, and there was no pulling of the frenulum.



Figures 13,14,15. Control H+7 post OP, sutureaff H+7 post OP and debridement.

5. DISCUSSION

A high frenulum can be checked visually bypulling the upper lip to see the movement of the pappilary tip or blanching which causes ischemiain the region.[9] A pathologic frenulum is indicatedfor removal when: abnormal frenulum attachment, which causes midline diastema; frenulum close to the gingival margin which causes gingival recession and interferes with maintaining oral hygiene; gingival attachment is inadequate so that the vestibule becomes short.[5] When the frenulum is thick, extensive, and thereis fibrous tissue with papillary penetrating attachment, it can interfere with normal upper lipfunction and aesthetics.[5]

Frenulum with high attachment can be treated with frenectomy or frenotomy procedures. Frenectomy is a procedure to removethe frenulum in its entirety including freeing the underlying muscle fibers, while frenotomy is a procedure to remove partial frenulum tissue or a procedure to relocate the frenulum attachment.[9] Frenotomy itself can be performed using a scalpel, electrosurgery or laser. Frenotomy using a blade is still considered the gold standard and can be widely applied.[4]

In this case, the classical Frenotomy technique was used to produce good aesthetics and minimize trauma to the patient. The advantage of the classical technique is that it is easy to apply. The disadvantages of this technique are the formation of scar tissue, high recurrence rate, bleeding, pain, discomfort, debris sticking to the suture thread.[6] In the classical technique, the suture at the edge of the diamond shape wound is slightly closer without making a pull. The incised mucosa is sutured with interrupted sutures. The gingiva is unable to close tightly so that healing occurs by secondary intention.[5] Most patients are more comfortable with methods with minimal tissue trauma. Patientperception of pain, aesthetics, functional comfortin classical technique is favorable.[4]

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