

Maxillary Labial Frenectomy in Case of Midline Diastema: A Case Report

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ABSTRACT

The maxillary labial frenulum is a band of tissue that connects the upper lip to the gum. Anomalies in its attachment, such as a high or thick frenulum, can lead to various issues, including discomfort, esthetic concerns, and dental problems, such as diastema (space between the upper central incisors). Maxillary labial frenectomy is a surgical procedure aimed at removing or modifying the frenulum to address these issues. This case report presents a 26-year-old female patient with a prominent maxillary labial frenulum that caused both functional and esthetic concerns. The patient underwent a labial frenectomy, resulting in a successful outcome with no complications and significant improvement in both appearance and comfort. This report discusses the procedure, patient outcomes, and considerations for clinical practice.

Keywords: Dentistry, Full mouth rehabilitation, Multidisciplinary approach.

INTRODUCTION

The maxillary labial frenulum is a mucosal fold of tissue that attaches the upper lip to the gingiva. When the frenulum is abnormally thick or positioned too low, it can cause discomfort, interfere with oral hygiene, and lead to dental issues, such as diastema (a gap between the central incisors).^[1] In addition, a prominent frenulum can affect a patient's esthetics, causing self-consciousness, particularly when the upper lip is drawn back during smiling or speech.^[2]

In cases where the labial frenulum causes functional or esthetic concerns, a maxillary labial frenectomy can be performed. This surgical procedure involves the removal or repositioning of the frenulum to address the underlying issue. This case report highlights the management of a 26-year-old female patient with a high, thick labial frenulum and a mild diastema.

CASE PRESENTATION

Patient information

Age: 26 years

Sex: Female

Medical history: The patient had no significant medical or surgical history. She reported no allergies and was not taking

any medications. She was otherwise in good health, with no known history of systemic conditions or oral diseases.

Chief complaint

The patient presented with concerns about the appearance of a prominent labial frenulum, which caused her upper lip to pull away from her upper teeth when smiling. She also reported difficulty in maintaining optimal oral hygiene due to the frenulum's attachment to the gum tissue [Figure 1].

Clinical examination

Upon intraoral examination, a high attachment of the maxillary labial frenulum was noted. The frenulum extended into the papillae of the maxillary incisors and was thick and fibrous. This abnormal attachment caused a visible diastema between the upper central incisors. The patient also experienced mild discomfort on palpation of the frenulum, but there was no

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sign of gingival inflammation or recession. The rest of the oral examination was unremarkable, with healthy teeth and periodontium.

Diagnosis

- High frenal attachment with moderate diastema
- No gingival recession or active periodontal disease.

Treatment plan

After a thorough discussion with the patient about the nature of the problem and the available treatment options, it was decided to proceed with a maxillary labial frenectomy. The goals of the procedure were as follows:

- Eliminate discomfort caused by the high attachment of the frenulum
- Reduce the diastema between the upper central incisors
- Prevent potential gingival recession or other periodontal complications in the future
- Improve esthetic appearance and boost the patient's self-esteem

The patient was informed of the potential risks and benefits of the procedure, as well as the post-operative care required for optimal healing.

Armamentarium

Haemostat, Scalpel blade no.15, Gauze sponges, 4-0 black silk sutures, Suture pliers, Scissors, and A periodontal dressing (Coe-pak).

Surgical procedure

The procedure was performed in the dental office under local anesthesia. The patient was made comfortable, and a sterile field was established. The following steps were undertaken:

Local anesthesia: 2% lidocaine with 1:100,000 epinephrine was administered to ensure complete numbness of the area.

Incision: A small vertical incision was made at the base of the frenulum to allow for its complete removal. The incision was carefully placed to minimize damage to the adjacent mucosal and gingival tissues.



Frenulum dissection: The frenulum was dissected from the gingiva and the underlying mucosal tissues. The attachment to the bone was also released to prevent any residual tension on the upper lip.

Excision of frenulum: The frenulum was completely excised, ensuring all fibrous tissue was removed.

Hemostasis: Bleeding was controlled by gentle pressure and the use of hemostatic gauze. 6.



Figure 1: Pre-operative photograph

Sutures: The edges of the diamond-shaped wound were sutured by using 4-0 black silk with interrupted sutures.

Post-operative care: The patient was given instructions on how to manage post-surgical care, including pain management with over-the-counter analgesics (ibuprofen), recommendations for maintaining good oral hygiene, and avoidance of strenuous activities for a few days.

Orthodontic considerations: After the frenectomy, the orthodontist may reassess the diastema closure and decide if further orthodontic treatment is required (e.g., space closure or alignment).

It is important to wait for adequate healing before proceeding with any orthodontic adjustments.

Post-operative outcome

The patient tolerated the procedure well and experienced only mild post-operative discomfort, which was controlled with analgesics. A follow-up visit was scheduled for one week after surgery to assess healing and for suture removal.

At the follow-up visit, the surgical site appeared to be healing well with no signs of infection or abnormal inflammation. The diastema was significantly reduced, and the labial frenulum no longer caused tension on the upper lip. The patient reported a decrease in discomfort and an improvement in her smile, which boosted her self-confidence.

The final follow-up was scheduled for 6 months post-operatively. The patient was satisfied with the result and showed no recurrence of the frenulum or diastema. The gingiva was healthy, and there were no signs of complications, such as gingival recession.

DISCUSSION

A maxillary labial frenectomy is a straightforward surgical procedure designed to address both functional and esthetic problems associated with the labial frenulum.^[3,4] A high or thick frenulum can cause various issues, including diastema, discomfort, and difficulties in maintaining oral hygiene. In some cases, if left untreated, a high frenal attachment may lead to gingival recession and periodontal problems.^[5]

The procedure has a high success rate and is generally well-tolerated by patients. However, careful attention must be paid

to the surgical technique, particularly in ensuring complete removal of the frenulum without damaging surrounding tissues. In addition, it is important to manage post-operative care carefully to avoid complications, such as infection or delayed healing.

In this case, the patient experienced significant improvements in both functional and esthetic outcomes, and there were no complications. For patients with diastema caused by a prominent frenulum, this procedure can be a viable solution, especially when combined with orthodontic treatment.

CONCLUSION

Maxillary labial frenectomy is an effective and minimally invasive procedure to treat functional and esthetic concerns related to high or thick labial frenula. This case highlights the positive outcomes achievable with frenectomy, including improved oral comfort, reduced diastema, and enhanced

esthetic appearance. Careful patient selection, surgical technique, and post-operative management are critical to ensuring successful outcomes. This procedure offers a high degree of patient satisfaction and plays a key role in addressing both functional and cosmetic issues related to frenulum anomalies.

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