

A Paralleling frenectomy technique for the Treatment of papilla penetrating frenum

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Abstract:

A frenum is a fold of mucous membrane, usually with enclosed muscle fibers, that attaches the lips and cheeks to the alveolar mucosa and, or gingiva and underlying periosteum. Abnormal frenum and muscle pull have been considered detrimental to periodontal health by pulling away the gingival margin from the tooth and thus contributing to the accumulation of plaque and calculus, leading to inflammation and pocket formation. Frenectomy is the complete removal of the frenum including its attachment to the underlying bone. This article aims to report a case of paralleling technique frenectomy and its advantages.

Keywords: frenum, paralleling technique.

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INTRODUCTION

A frenum is a fold of mucous membrane, usually with enclosed muscle fibers, that attaches the lips and cheeks to the alveolar mucosa and, or gingiva and underlying periosteum. The maxillary labial frenum develops as a post-eruptive remnant of the ectolabial bands, which connect the tubercle of the upper lip to the palatine papilla.¹ Sharma p et. Al² (2014) gave a review on frenectomy in which they stated that when the two central incisors erupt widely separated, no bone is deposited inferior to the frenum. A V-shaped bony cleft between the two central incisors and an abnormal frenum attachment result. Abnormal frenum and muscle pull have been considered detrimental to periodontal health by pulling away the gingival margin from the tooth and thus contributing to the accumulation of plaque and calculus, leading to inflammation and pocket formation. Abnormal or aberrant frena are detected visually, by applying tension over it to see the movement of the papillary tip or blanching produced

due to ischemia of the region. Frenectomy is the complete removal of the frenum, including its attachment to the underlying bone. There many techniques available for frenectomy, and each technique have its advantages and disadvantages. One of these is the conventional technique with scalpels and periodontal knives, which form a large surgical wound area to overcome this, a new surgical approach is used which is paralleling technique. Depending upon the extension of attachment of fibers, frena have been classified as Placek Mirko et. al (1974)³

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 extended into the interdental papilla

4. **PAPILLA PENETRATING:** When the frenal fibers cross the alveolar process and extend up to the palatine papilla.

The frenectomy done with the help of needle holders or artery forceps in a diamond shape is usually considered a conventional procedure. It was the first procedure introduced way back which, was later modified in various forms. Compared to other surgical techniques, this technique may result in a large rhomboidal wound area where primary closure is not possible in the lower part and healing takes place by secondary intention. It also causes more pain and discomfort to the patient. To overcome these problems, primary closure techniques like Z plasty and V-Y plasty were also proposed. One of the techniques referred to as the 'paralleling technique' can be considered in between these two extremes and is performed for the case presented.

CASE REPORT

A male patient was reported to the department of periodontics of MIDSR Dental College, Latur, with the chief complaint of spacing in the upper front teeth region of the jaw, which was not present previously. After that detailed case history of the patient was recorded, and no relevant findings were seen. Patients' blood investigations report was also normal.

On clinical examinations, the patient had midline diastema between two maxillary central incisors. This diastema was associated with papilla penetrating frenal attachment and, a tension test was performed by applying tension over the frenum to see the movement of the papillary tip or the blanch, which is produced due to ischemia in the region which was positive. There was the presence of local factors, so ultrasonic scaling was done before the start of treatment.

Surgical procedure:

We report a case having papilla penetrating frenum using paralleling frenectomy technique. The need for treatment and the overall procedure was explained to the patient before performing it, as well as written

informed consent was also taken from the patient. Before the start, of the procedure, local anesthesia was given to the patient and a preoperative photograph was also taken.

For Paralleling technique labial frenectomy, the upper lip was pulled upward by the assistant, then, the frenum was tightened. The incision was started and two paralleling incisions were placed on each side of the base of the frenum with a number 15 blade (Figure 2) and a band of frenum separated through and through (figure 3). An incised frenum is held with tissue forceps and removed by giving releasing incision on the top and bottom of the frenum (Figure 4). After the excision of frenum, deep dissection of the muscle fibers was done to remove all the attachments present at that site (Figure 5). The wound approximation was done by giving simple interrupted sutures using a 3-0 silk Suture (Figure 6). No periodontal pack was applied after surgery. The patient was recalled after seven days for suture removal.

Post-operative instructions:

After surgery post-operative instructions and medication should be given to the patient and ask the patient, not to pull their lips, to maintain proper oral hygiene, to avoid brushing at the surgical site, avoid taking hot, spicy, citrus, and hard foods for a few days, take a soft diet, and use 0.2% CHX mouth wash twice daily and come after seven days for suture removal.



FIG. 1 PREOPERATIVE VIEW



FIG. 2 TWO VERTICAL PARALLEL INCISIONS
GIVEN



FIG 6. SIMPLE INTERRUPTED
SUTURES PLACED



FIG.3 AFTER INCISIONS GIVEN



FIG 7. 1 MONTH FOLLOW UP



FIG 4. FRENUM AFTER EXCISION

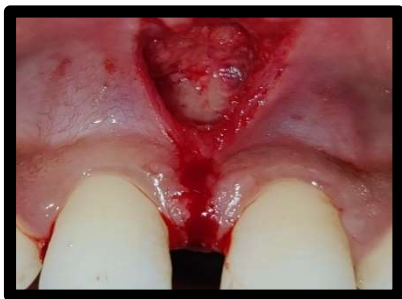


FIG.5 DEEP DISSECTION OF THE MUSCLE
FIBERS

DISCUSSION

This case report showed postoperative subjective effects of paralleling techniques after frenectomy. In the era of periodontal plastic surgery, more conservative and precise techniques are being used to create more functional and aesthetic results. The management of aberrant frenum has traveled a long journey from Archer's⁴ and, Kruger's⁵ "classical techniques" of total frenectomy to Edward's⁶ more conservative approach. Recent techniques added frenal relocation by Z-plasty,⁷ frenectomies with soft-tissue graft⁸, and laser⁹ applications to avoid typical diamond-shaped scars and facilitate healing. Each method has its advantages and disadvantages. Dr. Chandulal D. Dhalkari et al.¹⁰ in 2017 gave a case report on frenectomy by paralleling techniques and reported that Paralleling technique provides better patient perception in terms of postoperative pain and speech. Shahabe Saquib Abullais et al (2018)¹¹ also give the same Statement. Dr. Rizwan Sanadi et al (2017)¹² compared conventional and paralleling frenectomy techniques and gave conclusion that

Paralleling technique provided better patient perception in terms of minimal postoperative pain and functional complication when compared with the conventional technique.

CONCLUSION

As the conventional frenectomy procedure results in the formation of a large wound area after the excision of the frenum at the base sometimes so the paralleling technique can be used as an alternative conservative procedure that creates a small wound area and, healing is occurred by primary intention.

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