

# Frenectomy Combined with A Laterally Positioned Graft: A Case Report

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## ABSTRACT

**Introduction:** Frenectomy is a common periodontal plastic surgical procedure used to relocate or eliminate an aberrant frenum to create a zone of attached gingiva. Often the loss of the interdental papilla between the maxillary incisors during the classical frenectomy creates an unacceptable esthetic result.

**Case report:** A surgical technique combining a frenectomy with a laterally positioned graft is presented. Closure across the midline by laterally positioning gingiva and healing by primary intention results in attached gingiva across the midline.

**Conclusion:** The esthetic result is superior to that obtained with the classic frenectomy technique.

**Keywords:** Frenectomy, Lateral Positioned Graft, Attached Gingiva

## INTRODUCTION

Health, comfort, and function with acceptable aesthetics are the goals of periodontal therapy. The assumption in the past that the presence of an attached gingival zone is required for the maintenance of periodontal health has spurred the development of mucogingival surgery.<sup>1</sup> In 1957, Friedman introduced the term mucogingival surgery as a type of plastic surgery to preserve the attached gingiva, to remove an aberrant frenum or muscle attachments, and to increase the depth of the vestibule.<sup>2</sup> The contemporary periodontal literature has established a rationale and surgical techniques to correct the morphology, position, and amount of soft tissue around the teeth or implant. An adequate amount of keratinized gingiva maintains gingival health by protecting the marginal gingiva from bacterial invasion preventing an increase in gingival recession, facilitating plaque control, and improving denture stability.<sup>3</sup>

In the classical frenectomy, interdental tissue and palatine papilla are completely excised which frequently results in an unacceptable esthetic result. Frenectomy combined with laterally positioned graft results in contiguous collagenous band of gingiva across the midline rather than “scar” formation.<sup>4</sup>

This case report describes a modified surgical technique of frenectomy that increases keratinized tissue using a lateral pedicle flap. The results of the procedure may increase the amount of attached gingiva, deepen the vestibular depth, and prevent progression of gingival recession.

## CASE REPORT

A 20-years female patient, reported to the Department of

Periodontics, Patna Dental College and Hospital, Patna with chief complaint of gingival recession over maxillary incisors since last 6 month. The patient had a routine plaque control recall plan and maintained good oral hygiene care. A clinical examination revealed healthy but reduced supporting tissue surrounding the remaining teeth. On a tension test, it was found that the labial frenum was inserted high on the marginal gingiva. No bleeding upon probing or other inflammatory signs were found in the gingiva

## Surgical procedure

Under local infiltration anaesthesia, a horizontal incision was first made to separate the frenum from the interdental papilla. The frenulum was excised and labial alveolar bone was exposed in the midline.

Epithelium was removed around the denuded root surface and the exposed connective tissue was prepared as the recipient site for the laterally positioned flap. With a #15 blade, vertical incision from the gingival margin was made to outline the flap adjacent to the recipient site. Care was taken that the flap was sufficiently wider to provide a broad margin for attachment to the connective tissue border.

The flap was then laterally displaced and fixed to the adjacent gingival and alveolar mucosa with interrupted sutures. Coe-



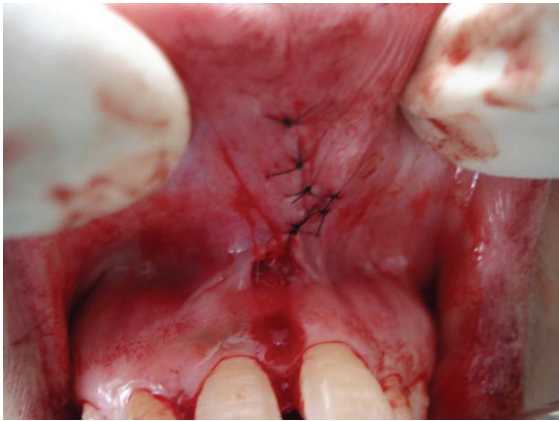
Figure-1: Preoperative view

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**Figure-2:** Frenulum totally excised



**Figure-3:** Pedicle graft sutured across midline



**Figure-4:** Coe-pack placed



**Figure-5:** Coe-pack removed after 1 week



**Figure-6:** Healing after 1 week

pack was applied at the surgical site for obtaining stability. A mild analgesic was prescribed for post-operative pain. The pack was removed after 1 week (figure 1-6).

The results obtained were stable and esthetically pleasing. On healing, a greater width of attached gingiva was obtained in the midline and no loss of interdental papilla was noted.

### DISCUSSION

Over the years, the amount of attached gingiva necessary to maintain gingival health, to prevent gingival recession, and to slow attachment loss has been controversial. The attached gingiva is by definition the gingiva extending from the free margin of the gingiva to the mucogingival line minus the pocket or sulcus depth measured with a thin probe in the absence of inflammation. Considering the histologic differentiation between the attached gingiva and alveolar mucosa, the attached gingiva is composed of very dense collagenous, fibrous connective tissue with keratinized epithelium, and it is relatively avascular compared to the alveolar mucosa.<sup>5</sup>

In the past it has been assumed that some width of attached gingiva is necessary to maintain gingival health by separating the stable gingival margin from the movable alveolar mucosa. It was also assumed that the depth of vestibular sulcus was a significant factor in gingival health. As a result of this concept, various surgical techniques developed to achieve adequate anatomical dimensions.<sup>6</sup>

Lang and Loe (1972)<sup>7</sup> reported that a narrow band of 1-2 mm attached gingiva was necessary for gingival health, but other studies indicated that this is not the case. Miyasota et al (1977)<sup>8</sup>, Wenstorm et al (1982) and Salkin (1987) have shown that it is possible to maintain a healthy and stable gingival margin with little or no attached gingiva, providing the individual maintains a high standard of oral hygiene.

However, the various findings point out that the precise form of treatment depends on the anatomical and pathological variables involved in the lesion and in some cases the view of the patient.

The case described in this paper is of a patient who had excellent oral hygiene and follow-up sessions, so she would be a candidate for periodontal surgery. She suffered from high frenal attachment which extended palatally. This caused unaesthetic appearance and also hindered proper brushing.

In order to prevent progressive gingival recession over the abutment area and to raise resistance to plaque bacteria frenectomy combined with lateral pedicle graft was planned. Frenectomy is a common procedure in the periodontal plastic surgery which involves complete removal of the frenum, including its attachment to underlying bone.<sup>9</sup> The surgical procedure described in this article is a modified method for increasing keratinized tissue along with frenectomy. It thus prevents the progression of marginal tissue recession. Frenectomy combined with laterally positioned graft has two advantages. The main advantages of this procedure are that the pedicle flap provides for a large amount of donor mucosa with a blood supply, flap tissue which closely matches the color of the surrounding tissue. Further, on healing there is a contiguous collagenous band of gingiva across the midline rather than “scar” formation. The procedure is easy to perform in an outpatient set and since there is no scar formation and there is excellent colour match, it is esthetically pleasing. Also, a greater width of attached gingiva is obtained. With adequate keratinized gingiva and proper brushing, this patient has maintained a stable and healthy gingival margin without additional gingival recession.

## CONCLUSION

An aberrant frenum may interfere with effective plaque control and /or pull the wall of the pocket and thereby aggravate the lesion. If the frenum is large and inserts into the papillary gingiva, loss of papilla is possible after surgical removal of most of the keratinized gingiva. The placement of gingival graft to cover the area will improve the ability to prevent papillary recession and to prevent reattachment of the resected frenum.<sup>10</sup> The alternative flap design reported in this article may be an effective surgical approach to increase the amount of attached gingiva, deepen the vestibule, and displace the frenum and the muscle insertions.

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