

# Labial Frenectomy through Z Plasty

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## ABSTRACT

Midline diastema is a common aesthetic problem in mixed and permanent dentition. A high frenum attachment is often the cause of persistent diastemas. Labial frenectomy is the complete removal of the frenum which often attaches to the center of the upper lip and between the upper two front teeth. It may be needed

when a frenulum is attached too high on the gums causing space between the teeth. This case report demonstrates the removal of the abnormal labial frenum attachment in a 20 year old male through the technique of Z-plasty and subsequent closure of midline diastema following orthodontic treatment.

**Key Words:** Midline diastema, abnormal frenum, z-plasty

## INTRODUCTION

Frenectomy is a complete removal of frenum, including its attachment to the underlying bone, and may be required in the correction of an abnormal diastema between the maxillary central incisors. In the present case, frenectomy was done through Z plasty. Z-plasty is a plastic surgery technique used to improve the functional and cosmetic appearance of scars. It involves a central incision and creation of two triangular flaps of equal dimension that are then transposed [1].

## CASE REPORT

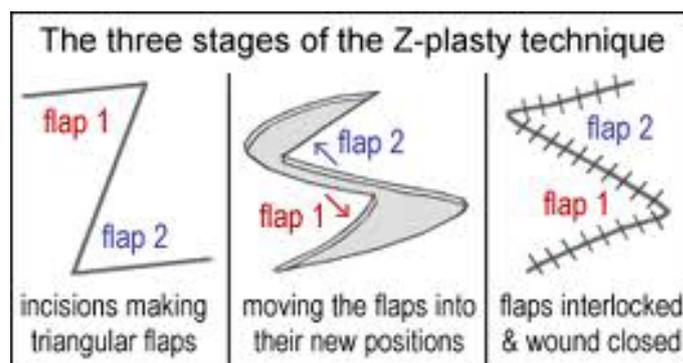
We report here a case of a 20-year old male who reported to a tertiary care hospital with the problem of a midline diastema between the maxillary central incisors. The cause of the Diastema appeared to be a abnormal frenal attachment. Intra-Oral Periapical Radiograph was taken to find out the cause of diastema and to rule out the presence of any unerupted mesiodens. The diastema was created due to a wide and abnormal frenal attachment.

Patient was told about the procedure and informed consent was taken. He was administered 2% xylocaine with Adrenaline. Infiltration was given on the labial aspect and on the palatal aspect near the base of the papilla. An incision was made across the base of the frenum at its attachment to the incisive papilla. The dissection was carried down to the periosteum, and the incision is then extended along both sides of the frenum to its attachment on the labial mucosa forming a diamond shaped incision following which removal of mucosa and excess fibrous tissue across the alveolar ridge between the teeth was done. All the soft tissue barriers were removed. The incision was then extended superiorly along with removing the inter-radicular bone between the teeth. One central incision was given and two lateral incisions at an angle of 45 degree, creating two triangular flaps of equal size and shape. Adequate undermining of surrounding tissues was performed to achieve proper mobilization of the flaps and minimize the distortion of the underlying structures. The two flaps were then transposed to the opposite side of apex of each flap. Transposition of these triangles redistributes tension on the wound and changes central

limb direction. They were then sutured to the defect at the opposite side of the other flap base. [Table/Fig-1] and secured in position by using interrupted braided silk suture [Table/Fig-2]. The vertical incision on the attached gingival was also closed by suturing. Antibiotics and pain killers were administered and Routine wound care instructions were given to the patient. The wound was reexamined after a day, then after a week and sutures were removed in 14 days time. At the time of performing Z plasty, ligature wires were tied around both the central incisors. Patient was referred to an Orthodontist for further treatment. On follow up, after 4 months, improvement in the midline diastema was seen.

With this technique, it is possible to redirect a scar into better alignment with a natural skin fold or the lines of least skin tension. Basic z-plasty flaps are created using an angle of 60 degree on each side [2]. Classic 60° Z-plasty lengthens scars by 75%, while 45° and 30° designs lengthen scars by 50% and 25%, respectively [Table/Fig-3]. The Z pattern is effective as it promotes re-distribution of tension on the skin and the wound and helps in healing along the skin lines. It helps in minimizing scar formation and has a camouflaging effect.

A curvilinear form of Z-plasty (referred to as S-plasty) may be used when straight lines may be particularly obvious, such as in the cheek. Design of the Z-plasty with unequal angles and limbs creates a situation in which the smaller triangle moves significantly



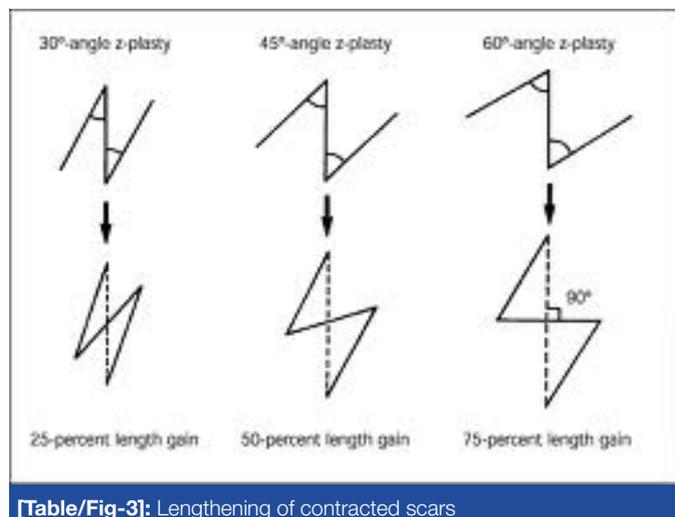
[Table/Fig-1]: Stages of Z plasty



**[Table/Fig-2]:** Midline diastema between the Central Incisors and sutured incision following Z plasty

less than the larger triangle. This may be useful in areas where small amounts of tissue need to be moved with as little distortion as possible (eg. near eyes, lips) [3].

Labial frenectomy can be performed before, during or even after the orthodontic closure of the maxillary midline diastema, depending on the individual case. Koora K, [4] reported a case of spontaneous closure of midline diastema in 2 months following frenectomy in a 9 year old girl. The same procedure can also be done through Lasers as performed by Olivi G [5] using Er,Cr:YSGG (erbium,chromium:yttrium, scandium,gallium,garnet) laser at a power setting of 1.5 W or less and 20 to 30 pulses per second and by Puthuserry [6] using carbon dioxide laser but it is expensive and



**[Table/Fig-3]:** Lengthening of contracted scars

still not routinely available in our country.

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