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Case Report

A rare case of upper labial frenulum causing functional and aesthetic impairment: surgical management with frenuloplasty

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ABSTRACT

The superior labial frenulum, connecting the upper lip to the maxillary gingiva, can exhibit variations in attachment and morphology leading to functional and aesthetic concerns. This case report discusses a five-year-old male presenting with an increased gap between upper central incisors, speech difficulties, and restricted lip movement due to a thick upper labial frenulum. Surgical intervention through a frenuloplasty was performed after conservative measures failed. A "Z" shaped incision allowed for the detachment and repositioning of the frenulum to enhance lip alignment. Post-surgery, the patient demonstrated improvements in speech and lip mobility, with the potential for orthodontic treatment to address the diastema. This case underscores the importance of early identification and surgical correction of frenulum anomalies, resulting in significant functional and cosmetic benefits. Monitoring over two weeks confirmed the surgery's success.

Keywords: Upper labial frenulum, Frenuloplasty, Case report

INTRODUCTION

The superior labial frenulum is a soft tissue fold that connects the upper lip to the anterior aspect of the maxillary gingiva. Also referred to as the maxillary labial frenulum, it originates at the midline on the inner surface of the upper lip. Composed of alveolar mucosa, it is embryologically derived as a post-eruptive remnant of the tectolabial bands. It provides support and stability to the lip and keeps the upper lip in harmony with the growing bones of the maxilla.[1,2] Hence, it plays an important role in the regulation of facial growth.[1,3] Variations in its attachment or morphology can cause functional and aesthetic problems.[1] These may include midline diastema, lip mobility restriction, speech difficulties, feeding issues in infants, or difficulty with oral hygiene.[4-6] Surgical management is indicated when conservative approaches fail or when significant impairment exists. Frenuloplasty offers a simple, effective solution, particularly in symptomatic or unresponsive cases. In this clinical case report, we present a case of maxillary labial frenuloplasty in a patient.

CASE REPORT

A five-year-old male presented to the surgery OPD at PGIMS, Rohtak with chief complaints of increased gap between upper central incisors, difficulty in speech and restricted movement of upper lip. Face is symmetrical and mouth opening is adequate. The abnormal fold of tissue between upper lip and gum was first noticed at the age of one year. On examination, the patient had a thick upper labial frenulum associated with diastema, difficulty in upper lip movement and inability to pronounce certain sounds. No associated pain ulceration or bleeding. There is no history of any prior orthodontic treatment. There is no history of any trauma to oral cavity or any infections. After assessment it was decided that a frenuloplasty was

necessary to be performed. Initially, local anesthesia was administered to patient. A "Z" shaped incision was made to create two triangular flaps. The frenulum was detached from its attachment point on the lip and gums. The flaps are rotated and repositioned to achieve a more natural lip alignment. The flaps were sutured back together, and the sutures are removed after a week.

Figure 1: Preoperative image of thick upper labial frenulum with associated midline diastema and restricted upper lip mobility.

Figure 2: Preoperative image of thick upper labial frenulum with associated midline diastema and restricted upper lip mobility.

Figure 3: Upper labial frenuloplasty using Z plasty.

Figure 4: Administration of local anesthesia to the upper labia frenulum.

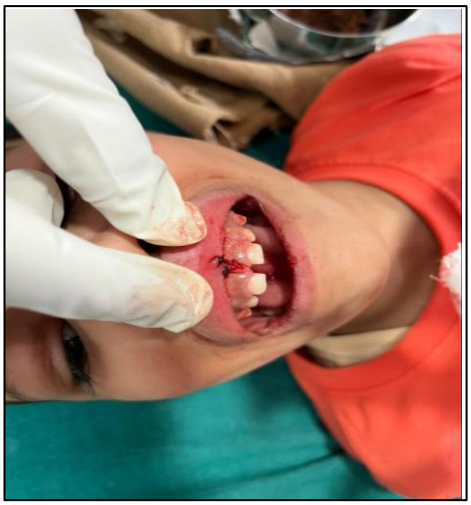

Figure 5: Better upper lip mobility post upper labial frenuloplasty.

DISCUSSION

Anomalies of the upper labial frenulum, although often benign and asymptomatic, can sometimes lead to significant functional and aesthetic concerns, particularly in the pediatric population.[7] In this case, the patient presented with a thick and fibrotic frenulum associated with a midline diastema, restricted upper lip movement, and speech difficulties-symptoms that necessitated surgical intervention after conservative measures proved inadequate. The decision to perform a frenuloplasty was driven by the severity of the symptoms and the failure of spontaneous resolution, which may occur in some children as they age.[8]

The use of a Z-plasty technique in this case allowed for effective lengthening and reorientation of the frenular tissue, reducing tension and improving mobility. This method is preferred in cases where both functional impairment and cosmetic appearance are concerns, as it provides favorable aesthetic outcomes and minimizes the risk of recurrence.[9,10] Several studies have emphasized the importance of early intervention in cases of abnormal frenulum anatomy that interfere with speech, oral hygiene, or feeding.[11,12] While timing of surgical intervention remains a subject of debate, many clinicians advocate for treatment during early childhood to support normal oral development and speech acquisition.[11] In this case, early correction at five years of age provided prompt relief and set the stage for future orthodontic treatment.

Postoperatively, the patient exhibited noticeable improvements in speech articulation and upper lip mobility. Although diastema correction may still require orthodontic management, frenuloplasty played a pivotal role in removing a major contributing factor. This underscores the role of an interdisciplinary approach, combining surgical and orthodontic care to achieve optimal outcomes. Overall, this case reinforces the significance of thorough clinical evaluation of frenular anomalies and individualized treatment planning. Timely surgical management can yield considerable functional, developmental, and psychosocial benefits in young patients.

CONCLUSION

In this case report, we present a specific surgical case performed to treat the upper labial frenulum in a patient. The patient had complaint of increased gap between upper central incisors, difficulty in speech and restricted movement of upper lip. This case highlights a clinically significant upper labial frenulum anomaly successfully treated with frenuloplasty. Early recognition and surgical intervention can result in excellent functional and cosmetic outcomes. It helps the patient with natural smile, normal speech and with the help of orthodontic treatment like braces, diastema can be corrected. We concluded that the surgery was successful as a result of monitoring the condition for two weeks.

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