



ORIGINAL RESEARCH PAPER

Periodontology

LIP REPOSITIONING - A NEW COSMETIC TREATMENT IN PERIODONTICS

KEY WORDS: Gummy Smile, Lip Repositioning, Patial Thickness Flap, Mucogingival Junction

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ABSTRACT An innovative cosmetic technique called lip repositioning technique is used for the reduction of excessive gingival display. In the present case report gummy smile was reduce by limiting the retraction of elevator muscles (e.g., zygomaticus minor, levator anguli, orbicularis oris, and levator labii superioris). The technique is fulfilled by removing a strip of mucosa from maxillary buccal vestibule and creating a partial thickness flap between mucogingival junction and upper lip musculature, and suturing the lip mucosa with mucogingival junction, resulting in a narrow vestibule and restricted muscle pull, thereby reducing gingival display.

Introduction

Excess gingival display (EGD), also known as a 'Gummy Smile', is a condition that affects the altogether appearance of an individual. A gummy smile can also be cause of embarrassment for those afflicted with it, and prevent them from smiling to their full potential. Excessive gingival display is a cause of patient dissatisfaction that may occur because of various intraoral and extraoral etiologies.¹ Extraoral causes are vertical maxillary excess in which there is an enlarged vertical dimension of the midface and incompetent lips, hypermobile upper lip, short upper lip, measured from sub nasale to inferior border of upper lip or asymmetric upper lip. The average length of maxillary lip is 20-22 mm in young adult females and 22-24 mm in young adult males.² Intraoral causes of EGD include delayed/ passive eruption³ in which the gingivae fail to complete the apical migration over the maxillary teeth to a position that is 1 mm coronal to the cement-enamel junctions, plaque/ drug induced gingival enlargement, disharmony of dental arches, short clinical crown length and dentoalveolar extrusion with concomitant coronal migration of the attachment apparatus, which includes the gingival margins.⁴

People have an illusion that they possess gummy smile or that when they smile most of the gums are visible since they have short teeth or gums have grown over their teeth. Gummy smile due to excessive gingival display always makes a normal person conscious while smiling, especially when the problem is related with female patients who are more esthetically conscious than male. Gummy smile is seen due to improper relation between gingival tissue and the tooth, with gingival tissue in excess and tooth portion in a small amount. Gummy smile is governed by various etiological factors, for example jaw deformities, which cause excessive gingival display and require a orthognathic surgery.⁵ This occurs due to excessive increased vertical height of maxillary arch. The orthognathic surgery is a complicated procedure and requires team work with hospitalization and general anesthesia, while lip repositioning is innovative and effective, less time consuming and is performed under local anesthesia. Apart from it, delayed eruption as a cause of excessive gingival display and its treatment by esthetic crown lengthening are well documented.^{3,6} The clinician must consider the dynamic relationship between the patient's dentition, gingival, and lips while smiling.⁴

CASE REPORT

A female patient aged 30 years reported to the department of dentistry, Shaheed Hasan Khan Mewati Govt. Medical College, Nuh, Haryana (India), with the chief complaint of excessive display of gums while smiling. There was no significant medical or family history and patient was medically sound and fit for the surgical procedure. On clinical examination, extraorally, face was found to be bilaterally symmetrical with incompetent lips. Intraorally, a moderate gingival display was seen during smiling, which extended from maxillary right canine to maxillary left canine [Fig. 1]. Technique Aim of the technique Lip repositioning is a surgical way to correct gummy smile by limiting the retraction of the elevator smile muscles (e.g., zygomaticus minor, levator anguli, orbicularis oris, and levator labii superioris). Surgical technique

complete extra oral and intraoral mouth disinfection was done with 2% betadine, followed by infiltration with local anesthesia, (2% lignocaine hydrochloride with 1:80,000 epinephrine). Thereafter, the surgical area to be operated was demarcated with the help of an indelible pencil also shown in schematic diagram [Fig. 2]. The surgical area started at the mucogingival junction, which extended 10–12 mm superiorly in the vestibule [Fig. 3]. Incisions were made in the above mentioned surgical area and both superior and inferior partial thickness flap was raised from maxillary right first molar to maxillary left first molar. The incisions were then connected with each other in an elliptical outline. The epithelium was then removed [Fig. 4] within the outline of the incision leaving the underlying connective tissue exposed [Fig. 5]. The parallel incision lines were approximated with interrupted stabilization sutures at the midline [Fig. 6] and other location along the borders of the incision to ensure proper alignment of the lip midline with the midline of the teeth and then a continuous interlocking suture was used to approximate both flaps. Sutures were resorbable in nature [Fig 7]. Patient was discharged with all post surgical instructions and medications for five days which included analgesic (Ibuprofen 600 mg QID daily for 2 days), antibiotic (Amoxicillin 500 mg TDS for five days), along with cold packs extra orally to decrease post surgical swelling. Patient was recalled after one week for a follow-up. The patient after a week complained of mild pain and tension on the upper lip. After three months follow up, the suture area healed in the form of a scar which was not apparent when the patient smiled because it was concealed in the upper lip. After 6 months follow up the results improved which correlated with the patient's satisfactory smile (Fig.8).

Fig. 1

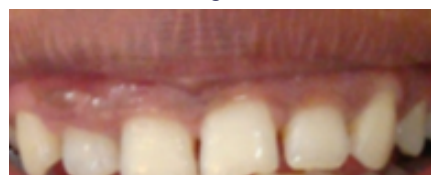


Fig. 2

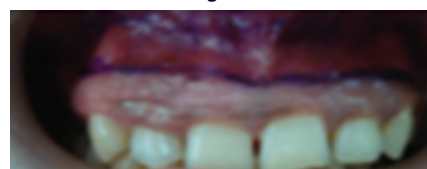


Fig. 3



Fig. 4

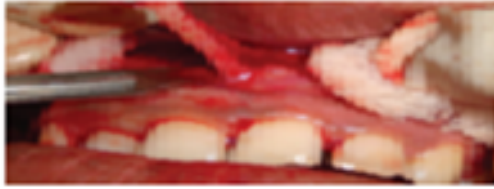


Fig. 5



Fig. 6



Fig. 7



Fig. 8



in submucosa by giving proper incision. Some cases with rare complication reported in the literature are paresthesia⁷ and transient paralysis.⁸

Our case presents the successful clinical outcome of lip repositioning technique. In it the crown length was appropriate and did not require any crown lengthening. Variation in the technique was also reported. Lip repositioning was most commonly used as a plastic surgical procedure and is rarely used as a dental procedure.⁹ In the literature lip repositioning has also been performed in conjugation with rhinoplasty.¹⁰ The nasal approach allows both surgical procedures to be combined; the surgical site is extended only minimally. This should be done only if rhinoplasty is to be performed and if the patient desires a remedy for excessive gingival display.¹¹

CONCLUSION

Lip repositioning procedure is an innovative and effective way of reducing the EGD and improve the gummy smile of a patient. This technique is an easy and less time consuming cost-effective way to give satisfactory results to the patient.

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DISCUSSION

In most patients, the lower edge of the upperlip assumes a "gumwing" profile (male or female pateint whose gums not fully exposed while smiling), which limits the amount of gingiva that is exposed when a person smiles. Patient who have a high lip line exposes a broad zone of gingival tissue and may often express concern about their "gummy smile". The form of the lips and the position of the lips during speech and smiling cannot be easily changed, but the periodontist may, if necessary, modify/ control the form of the teeth and interdental papillae as well as the position of the gingival margins and the incisal edges of the teeth along with repositioning of the lip. In other words, it is possible by a combination of periodontal and prosthetic treatment measures to improve dentofacial esthetics.

Some precautions are taken while performing lip repositioning surgery -

1. We first check the width of attached gingiva as thin gingival biotype alters the results as more chances of gingival recession are seen and thick biotype may lead to revascularisation and pocket formation. In our case gingival thickness was an average of 2 mm which was normal thickness and result was satisfactory.
2. Care must be taken to avoid damage to minor salivary glands