

A BOON TO SMILE ENHANCEMENT: LIP REPOSITIONING ALONG WITH CONVENTIONAL DEPIGMENTATION, A COMBINED APPROACH.

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Abstract

Smile brings a lot of confidence in an individual and black gums and high smile line hinders the esthetic of a patient. To enhance the esthetics, Lip repositioning along with gingival; depigmentation performed for the reducing the gummy smile and also reduces the dark gums and thus providing an esthetically beautiful smile.



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INTRODUCTION

How well a person can function in society is frequently determined by their smile, or by their capacity to convey a variety of emotions by the shape and movement of their lips and teeth. Of course, the value placed on a lovely grin is nothing new. A balance between elements relating to the teeth and the gingiva is necessary for good smile aesthetics. The aesthetics of a smile are greatly impacted by how the teeth are positioned within the boundaries of the gingival architecture.

Gingival factors include shape, contour, level, and symmetry of the gingival margins and zeniths, the color and health of the gingiva, and position of the interdental papilla, among others.

These days patients are also very much concerned about the color of the gingiva.

A healthy gingiva should be coral pink, however physiological differences might result in coloured spots. Melanin granules, which are created by melanoblasts, are the cause of gingival pigmentation. The degree of pigmentation depends on melanoblastic activity.² Gingival depigmentation is a procedure performed to eliminate the pigmented superficial gingival epithelium.

Along with black gums, gummy smile also affects the esthetics of a patient. The patients who are having high lip line (Gummy smile), which is mainly due to excessive gingival display, makes a person conscious while smiling. For this, lip repositioning has gained a lot of impetus over the recent years and gives pleasing results.

This clinical report describes the successful use of lip-repositioning technique as well as gingival depigmentation for the reduction of excessive gingival display and dark gums, respectively.

CASE REPORT

A 24-year-old female patient reported to the department of periodontology, with the chief complaint of excessive gingival display and black gums. The patient had no substantial medical or familial history, and she was in good health and qualified to undergo surgery. The face was bilaterally symmetrical and the lips were inadequate during extraoral clinical evaluation. (Fig.1)

Intraorally, a severe gingival display was seen during smiling which extended from the maxillary right canine to the maxillary left canine. (Fig.2) She had no adverse habits as well as a non-contributory medical history. Therefore, the following treatment plan was selected to correct the smile problems:

- Lip-repositioning surgery to restrict the hypermobility of upper lip while smiling.
- Conventional Gingival depigmentation to eliminate the pigmented patches.

All the two surgical techniques were performed together. Surgical Procedure Extraoral and intraoral mouth disinfection was carried out with 2% Betadine, followed by infiltration of local anaesthesia, (2% Articaine with 1:80,000 epinephrine). The surgical area was demarcated with the help of an indelible pencil (Fig. 3). The surgical area begins at the mucogingival junction and extended 10-12 mm superiorly in the vestibule. Incisions were made in the abovementioned surgical area and both superior and inferior partial-thickness flaps were raised from the maxillary right canine to the left canine (Fig. 4).

The incisions were then connected with each other on the distal end in an elliptical outline. The epithelium was then removed within the outline of the incision, leaving the underlying connective tissue exposed (Fig. 5A 5B). To ensure that the midline of the lip and the midline of the teeth were properly aligned, the parallel incision lines were approximated with interrupted stabilisation sutures at the midline and other locations along the borders of the incision. Next, the continuous interlocking non-resorbable vicryl 5-0 sutures were used to approximate both flaps (Fig: 6). The sutures were naturally resorbable. Depigmentation would be accomplished using a scalpel procedure. The patient was informed of the entire treatment, and written consent was

acquired. The pigmented layer was removed using a No. 15 blade and a Bard Parker handle. After using the scalpel to remove the entire pigmented epithelium and a thin layer of connective tissue. (Fig: 7)

Following surgery, patients were prescribed oral antibiotics (amoxicillin 500mg three times day) and analgesics (ketorolac 20 mg stat, then 10 mg every 4-6 hours) for a week. After two weeks suture removal was done and Patient was then recalled after 1 and 3 months respectively. (Fig: 8A 8B 8C)

DISCUSSION

The aim of the article was to evaluate clinical outcomes of treatment procedure attempted to reduce gummy smile and the black gums. Lip repositioning is a promising technique. This procedure has been suggested for patients with minor discrepancies requesting a less invasive procedure compared with orthognathic surgery.

Surgical lip repositioning treatment can be performed to reduce the labial retraction of the elevator smile muscles and minimize excessive gingival display.³ Rubinstein and Kostianovsky in 1973 described lip repositioning surgery without muscular intervention. This technique is conducted to limit retraction of the upper lip elevator muscles through removal of a strip of mucosa from the maxillary buccal vestibule.⁴ The muscles responsible for upper lip elevation include levator labii superioris, levator labii superioris alaeque nasi, levator anguli oris, Zygomaticus major.⁵

The extent of upper lip mobility reduction is variable. In this case a reduction of 3 mm of lip movement was achieved after the end of 6 months following lip repositioning. This outcome was comparable with studies by Rosenblatt, Simon and Humayun et al. The systematic review published by Tawfik et al. showed that lip repositioning successfully improved EGD by 3.4 mm

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Oral melanin pigmentation is a common finding occurring in almost all the races. It is associated with hyperactivity of melanocytes which are located in the basal layer of oral epithelium.⁸ The occurrence of gingival pigmentation is irrespective of the gender; however, the amount of physiologic pigmentation is probably determined genetically. However, according to Çiçek and Ertaş the degree of pigmentation is also related to mechanical, chemical, and physical stimulation, for example, smokers demonstrate more amount of gingival pigmentation than nonsmokers.⁹

Various treatment modalities have been used for this purpose including scalpel, electrosurgery, cryosurgery, abrasion using bur, and laser. Scalpel surgical technique is highly recommended in consideration of the equipment constraints that may not be frequently available

in clinics.¹⁰ It is known that the healing period for scalpel wounds is faster than other techniques.

CONCLUSION

Excessive gingival display and also the pigmented gingiva is an emerging aesthetic concern in today's era which hinders the patient's esthetic profile and hence it is the most demanding treatment for which patients approach dentist. Appropriate diagnosis of the etiology underlining the condition is a major factor which determines the outcome of the treatment. Conventional depigmentation for the black gingiva along with Surgical lip repositioning is a conservative approach to treat the condition if not associated with severe vertical maxillary excess. In the present case there was adequate reduction of excessive gingival display following the procedure and results were stable at 3 month follow up and patient was completely satisfied with the results.

REFERENCES

1. **Sharma H, Kaushik M, Tomar N, Wadhawan A, Dureja D.** Treatment of gingival melanin hyperpigmentation with diode laser: A report of two cases. *J Orofac Sci.* 2018;3:14.
2. **Mudassar S, Singh S, Kaushik M, Khan A.** Scalpel versus diode laser for gingival depigmentation: A case report. *Int. J. of Adv. Res.* 2021;9;511-518.
3. **Tomar N, Yadav S, Mudassar S, Kaushik M, Goyal R.** Gingival depigmentation with two different techniques: A Comparative Case Report. *Glob J Res Anal.* 2022;11;3-10.
4. **Terry, McGuire, M.** The perio-aesthetic-restorative approach for anterior reconstruction – Part I: Evaluation and periodontal surgery. *Pract Proced Aesthet Dent.* 2002;14:283-291.
5. **Weinberg, Eskow, R.N.** An overview of delayed passive eruption. *Compend Contin Educ Dent.* 2000;21:511–514.
6. **Rosenblatt A, Simon Z.** Lip repositioning for reduction of excessive gingival display: a clinical report. *Int J Periodontics Restorative Dent Int J Periodont Rest* 2006;1;26:111-112
7. **Tawfik O.K, El-Nahass, Shipman H.E., Looney P, Cutler S.W., Brunner C.W., et al.** Lip repositioning for the treatment of excess gingival display: A systematic review. *J Esthet Dent.*2018;30:101-112.
8. **Mehra M, Grover R, Gupta S, Sadana G.** Gingival Depigmentation in children: A case report. *Indian J Dent Sci.*2012;2: 42-44.
9. **Çiçek Y, Ertas U.** The normal and pathological pigmentation of oral mucous membrane: a review. *J Contemp Dent Pract.* 2003;4:76-86.
10. **Kaushik N, Srivastava N, Kaushik M, Gaurav V.** Efficacy of different techniques of gingival depigmentation: a comparative evaluation with a case report. *Int J Laser Dent.* 2013;3:68-72.

IMAGES



Fig: 1 Pre-Operative view smiling



Fig: 2 Pre-Operative while smiling view



Fig: 3 Surgical sites marked with indelible pencil



Fig: 4 Incision Placed



Fig: 5A Exposed connective



Fig:5B Surgical tissue excised



Fig:8A 2 weeks post-Operative



Fig:8B 1 month follow up



Fig:8C 3 months follow up