LIP REPOSITIONING TO REDUCE EXCESSIVE GINGIVAL DISPLAY – A CASE REPORT

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Abstract
The aim of present case report is to discuss surgical lip repositioning technique for the management of excessive gingival display related with vertical maxillary excess and increase mobility of the upper lip. By restricting the muscle pull by elevator lip muscles, this procedure reduces excessive gingival display during smiling. For patient, this procedure is safe, less invasive with minimal side effects and an alternative to orthognathic surgery in the correction of gummy smile.

Keywords: Excessive gingival display, Gummy smile, Lip repositioning

1. Introduction

Excessive Gingival Display (EGD) is a multifactorial condition that needs to be managed in a sequential manner in order to reach the proper treatment technique that targets and resolves the underlying etiologies. An innovative procedure called lip repositioning has been introduced and used recently either alone or in combination with other techniques. It can be used in certain cases as an easier, less complicated alternative to major surgical methods providing a pleasant satisfactory camouflage effect with lower morbidity.

Imbalance in the gingiva- tooth ratio results in predominant gingival appearance referred as "gummy smile." A normal gingival display between the inferior border of the upper lip and the gingival margin of the central incisors during a normal smile is 1–2 mm. In contrast, if the distance is 4 mm or more between excessive gingiva to lip then it is classified as unattractive. Excessive gingival display is a common cause of patients. Patients complain of "gummy smile".[1] Very often in our daily practice we come across patients with chief complaint of gummy smile. Therefore, the clinician need to evaluate the patient's smile, and also consider the relationship between the patient's dentition, gingiva, and lips while smiling.[2]

Etiological factors resulting in gummy smile can be: Hyper muscular function of upper lip and Skeletal vertical maxillary excess (VME)- it is due to overgrowth of maxillary bone, which enlarges vertical dimension of mid face and results in short lip, treatment ranges from Orthognathic surgery, Le fort I osteotomy, Crown lengthening, Intrusion, Myectomy to muscle resection. Whenever there is increased maxillary vertical excess, orthognathic surgery is the choice of treatment.[3] But in recent years lip repositioning and botox treatment are used to treat gummy smile.[4]

2. Case report

A 21 years female patient came with a chief complaint of excessive gingival display. The treatment goal was to minimize gingival display in patients smile. The patient's medical history was non-contributory, and there were no contraindications to surgical treatment. A clinical examination revealed excessive gingival display. With an exaggerated smile, the patients teeth and gingiva was visible from maxillary right first premolar to maxillary left second premolar , with 4–5 mm of excessive gingival display with a normal maxillary anterior anatomic proportions. Informed consent was obtained before starting the procedure.

Pre-operative measurements were made to check the smile line (which was measuring around 9 mm) (Fig. 1). Local anaesthetic (Xylocaine 2% with epinephrine, 1:100,000) was administered in the vestibular mucosa and lip from maxillary right to left first molar. A marking pencil was used to outline the incisions on the dried tissues (Fig. 2). A partial-thickness incision was made at the mucogingival junction from the right first molar to the left first molar, second partial thickness incision was made parallel to the first incision in the labial mucosa, 10–12 mm apical to the mucogingival junction. The incisions were connected at each first molar creating an elliptical outline of the incisions. The epithelial layer was been removed, leaving the underlying connective tissue exposed (Fig. 3). Care was taken to avoid damaging minor salivary glands in the submucosa. Local anaesthetic was used to control bleeding. The parallel incision lines were approximated with interrupted sutures (vicryl 4-0)

at the midline and other locations along the borders of the incision to ensure proper alignment of lip midline with the midline of the teeth. Then interrupted sutures were continued on the either sides to approximate both flap ends (Fig. 4).

Non steroidal anti-inflammatory drugs (Ibuprofen 600 mg 3 times daily for 3 days) after surgery. Post-operative instruction – ice pack application, to minimize lip movements when smiling and talking for 1 week. Post-operative healing occurred with minimal of ecchymosis and discomfort. The patient reported pain when smiling after surgery for 1 week . Sutures were removed 2 weeks later. The sutures line healed in the form of scar that was not apparent when the patients smiled, because it was concealed in the upper lip mucosa. 2 weeks later showed reduction in patient's excessive gingival display. 1 month follow up was done and the healing was adequate and the gingival display had adequately reduced. (Fig. 6)

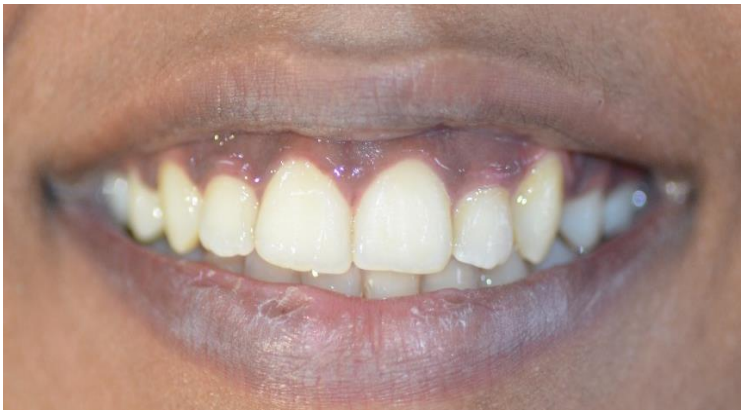

FIG 1 – PRE-OPERATIVE SMILE PICTURES

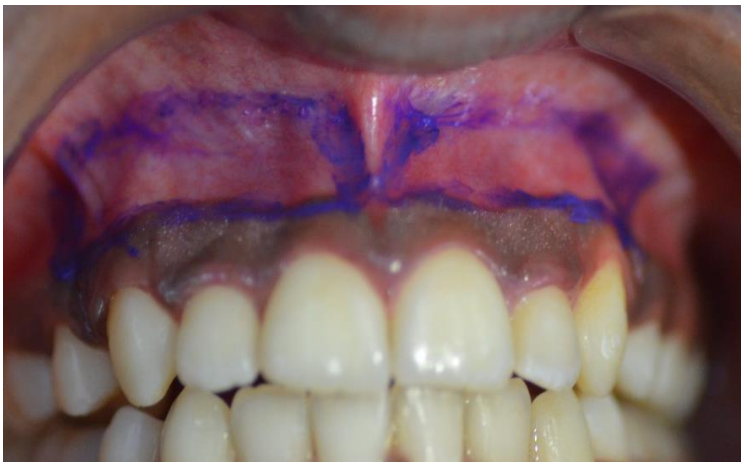

FIG 2 – INCISION LINES MARKED USING MARKING PENCILS

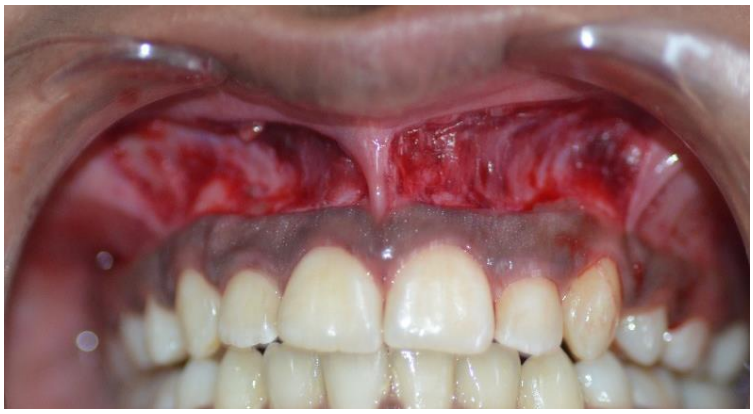

FIG 3 – SPLIT THICKNESS INCISION GIVEN AND CONNECTIVE TISSUE EXPOSED

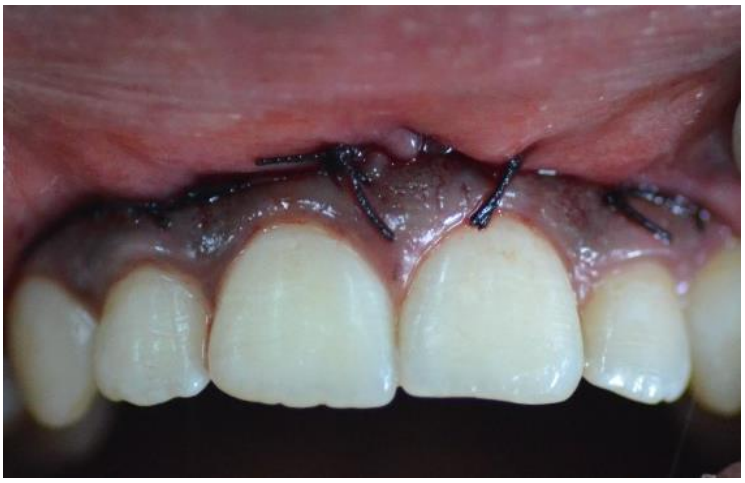

FIG 4 – INTERUPPTED SUTURES PLACED

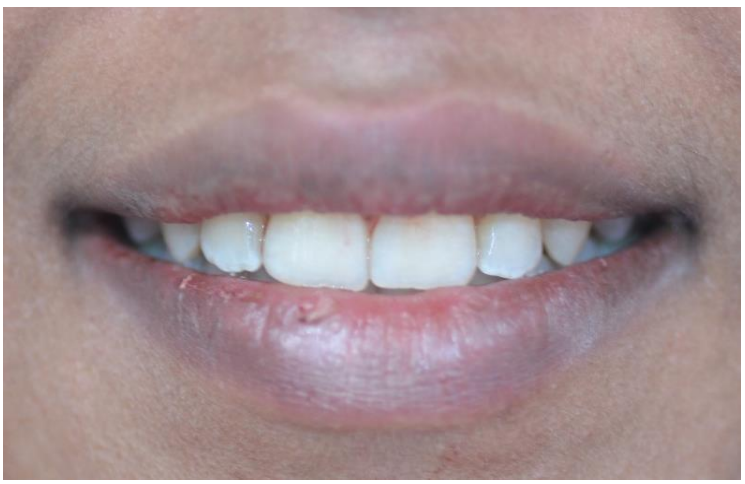

FIG 5 – IMMEDIATE POST OPERATIVE PICTURE

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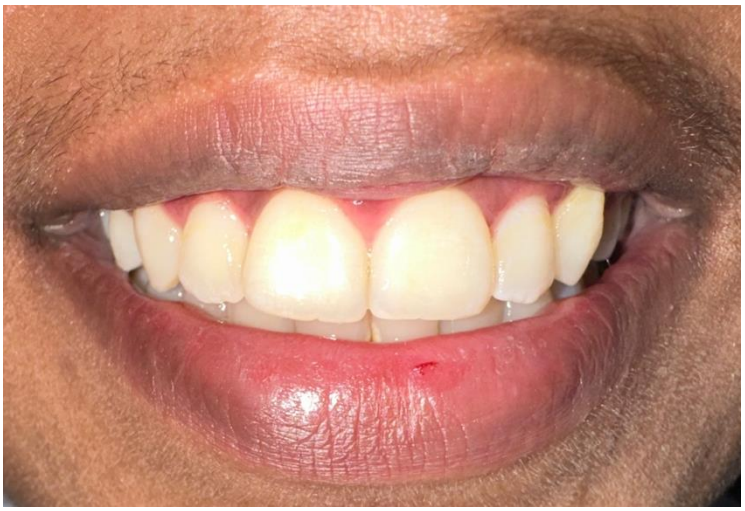

FIG 6 – 1 MONTH FOLLOW UP

3. Discussion

Patient who have a high lip line exposes a zone of gingival tissue. In this form of the lips, the dentist can modify/control the form of the teeth, the position of the gingival margins and the incisal edges of the teeth along with repositioning of the lip. It is possible by a interdepartmental approach, to improve dentofacial aesthetics. Successful clinical outcome of lip repositioning technique was achieved in this case. Crown length was appropriate and did not require any crown lengthening.

This clinical report describes the use of lip repositioning for the reduction of excessive gingival display. For an excessive gingival display according to VME classification degree II, III orthognathic surgery is preferred.[2] But in patients who are not willing for orthognathic surgery an alternative treatment is lip repositioning.[5] This technique is an easy and less time consuming cost-effective way to give satisfactory results to the patient.

Contraindications of lip repositioning includes minimal zone of attached gingiva, thereby creating difficulties in flap design, stabilization and suturing, and severe vertical maxillary excess.

4. Conclusion

Lately, lip repositioning has emerged as an innovative and effective way to improve the gummy smile of a patient. This technique is an easy and less time consuming cost-effective to give satisfactory results to the patients. This procedure minimizes gingival display by placing the upper lip in a more coronal position. The evidence gives stable results in patients who are not willing to undergo orthognathic surgery. But careful diagnosis and case selection are the important factors in the successful outcomes.

References

1. Rosenblatt A., Simon Z. Lip repositioning for reduction of excessive gingival display: a clinical report. *Int J Period Restor Dent.* 2006;26:433–437. [PubMed] [Google Scholar]
2. Garber D.A., Salama M.A. The aesthetic smile: diagnosis and treatment. *Periodontology.* 2000;1996(11):18–28. [PubMed] [Google Scholar]
3. Jananni M., Sivaramakrishnan M., Libby T. Surgical correction of excessive gingival display in class I vertical maxillary excess: mucosal strip technique. *J Nat Sci Biol Med.* 2014;5:494–498. [PMC free article] [PubMed] [Google Scholar]
4. Polo M. Botulinum toxin type A (Botox) for the neuromuscular correction of excessive gingival display on smiling (gummy smile) *Am J Orthod Dentofacial Orthop.* 2008;133:195–203. [PubMed] [Google Scholar]
5. Gaddale R., Desai S.R., Mudda J.A., Karthikeyan I. Lip repositioning. *J Indian Soc Periodontol.* 2014;18:254. [PMC free article] [PubMed] [Google Scholar]

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