Short Communication

Lip repositioning, an alternative treatment of gummy smile – 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.

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1. Introduction

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 male 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 molar to maxillary left first molar, 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 19 mm) (Fig. 1). Local anaesthetic (Xylocaine 2% with epinephrine, 1:100,000, and epinephrine, 1:50,000; Dentsply) 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 and electro coagulation were 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

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Fig. 1. Preoperative clinical photograph, showing excessive gingival display.

Fig. 4. Immediate postoperative clinical photograph.

Fig. 2. Incisions line.

Fig. 5. Postoperative clinical photograph after 1 week.

Fig. 3. Intraoperative clinical photograph.

Fig. 6. Postoperative clinical photograph after 2 weeks.

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 (Fig. 5). 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. Post-operative smile line was measured and it was measuring 24 mm (Fig. 6).

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.

Conflict if interest

None.

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