Original Article

International Journal of Dental and Health Sciences
Volume 05,Issue 03

MODIFIED LIP REPOSITION: A NEW METHOD IN MANAGEMENT OF GUMMY SMILE

Ahmed Ibraheem[1], Tihama Yousef[2], Abd Alkareem Khalil[3]

1. MSc, Department of periodontics, Faculty of Dentistry, Tishreen University, Lattakia, Syria.
2. Lecturer, Department of periodontics, Faculty of Dentistry, Tishreen University, Lattakia, Syria.
3. Professor, Department of oral and maxillofacial surgery, Faculty of Dentistry, Tishreen University, Lattakia, Syria.

ABSTRACT:

Objective: to evaluate the efficiency of modified lip reposition in management of gummy smile caused by hyperactive upper lip in young female patients.

Methods: Three female patients are included in this study who had gummy smile caused by hyperactive upper lip. The procedure was done by removal of a mucosal strip and myomectomy of the oral orbitalis in both sides with suturing the closure with silk 3/0 (Mucosal-periosteal sutures) for 21 days. Data was collected to study the recurrence of the procedure and the satisfaction of the patients during the follow up period (1 week, 1 month, 3 months and 6 months)

Results: All 3 patients were fully satisfied by the end of the follow-up period (after 6 months) regarding some inconveniences during the early after procedure period.

Conclusion: The modified lip reposition is a reliable surgical procedure in management of gummy smile caused by hyperactive upper lip.

Keywords: Gummy Smile, hyperactive lip, lip reposition, modified lip reposition.

INTRODUCTION:

The smile as a definition is the facial expression caused by the movement of the angles of the mouth upwards; but it has further meanings as it is the first communication method and the best socializing tool between people.[1] Although, the ugly smile gives negative effect on the impaction we give to the other.[2]

The beautiful smile requires a healthy gingiva, a suitable amount of the gingiva that exposes while smiling and harmony between color, shape and placement of the teeth.[3]

Tjan et al found that people with beautiful smile have the following inquiries: 1- The full crown of the upper anterior teeth is exposed. 2- 2mm of the gum is exposed. 3- One or two premolars are exposed bilaterally and asymmetrically. 4- The facial medline is correspondent with the medline between the upper mesial incisors.[4]

Recently, a new esthetic problem has showed up and it caused people to hide their smile while taking photos or laughing which is called in the dental literature the gummy smile where more than 3 mm of the gingiva is exposed in full smile.[5]

Gummy Smile" has recently received increased attention in the dental literature.[6-7] (Diamond,1996) has

*Corresponding Author Address: Dr. Ahmed Ibraheem. E-mail: dr.ahmed.ibraheem91@gmail.com

reported that approximately 7% of men and 14% of women have excessive gingival display (EGD) in full smile.[8] Numerous factors may cause excessive gingival display. So the case can be resulted from one etiology or it may occurs as a result of an interplay of several etiologies.[9] The differential diagnosis for the gummy smile recommends the best treatment.[10]

In this paper, we will highlight the hypermobile upper lip or "hyperactive lip"

The gummy smile, which diagnosed as a result of hyperactive lip, considered as a soft tissue problem and not a dental or skeletal problem. The upper lip moves 6-8 mm from the rest stage to full smile and the full crown of the incisors would be exposure. When the lip moves 1.5 to two times more than the average, it is considered hyperactive active.[11]

The urgent need and the continues trying to get the best possible results and to achieve accurate correction of the gummy smile to get it back to its normal position. Therefore, we can prevent functional or elastic deformities and we can help the patient to trust their own smile.

MATERIALS AND METHODS:

Three female patients were referred to the department of periodontics at the faculty of dentistry at Tishreen University with an excessive appearance of the gum while smiling and were diagnosed with a gummy smile caused by hyperactive lip. They underwent modified lip reposition with myomectomy (a new surgical approach used for the management of gummy smile)

The surgical procedure:

Disinfection of the surgical site is done with 2% betadine. The procedure is carried out under local anesthesia (lidocaine HCl with 2% epinephrine 1:200,000). The incision outline is first marked with a sterile indelible pen. The inferior border of incision is at the mucogingival line and the superior border was parallel to the lower border and was at a distance as twice as the gingival display (distance between upper and the lower incision margins = 12 mm). The two incisions are connected at the mesial ends of the first molars on either sides to create an elliptical outline. Incision is done with #15 blade .

A full thickness dissection is made at the mucogingival junction and the entire epithelium is excised along the elliptical outline, exposing the underlying connective tissue. The entire strip of mucosa between the two incisions is excised .

A bilateral myoectomy is done to the oral orbitalis muscle and the anterior nasal spin is exposed.

The incision lines are approximated with mucosal-periosteal sutures (3-0 black silk) ensuring correct alignment of the midline of lip with the midline of teeth . Extra oral dressing is placed for 48 hours.

Post-operatively analgesic (ibuprofen 400 mg BD for 2 days) and antibiotic (amoxicillin 500 mg TD for 5 days) are prescribed. Patient is instructed to use ice compresses. Postoperative instructions were given and the patient was dismissed.

The sutures were undressed after 21 days and the patients were recalled for follow-up after 1 week, 1 month , 3 months and 6 months.

Case 1:

A 20-year-female patient came to the department of periodontics with an excessive appearance of the gum in full-smile (5 mm) . She underwent the modified lip reposition and was recalled for the follow up after one week and she showed some inconvenience because of the tension of the sutures and some after-surgery swelling but she was fully satisfied with the result. After one month she was called for follow up and there was no inconvenience and there was no exposure of the gum during full smile the patient was fully satisfied. The result was stable after 3 months and 6 months.

Case 2:

A 21-year-female patient came to the department of periodontics with an excessive appearance of the gum in full-smile (5 mm in central and lateral incisors and 7 mm in canines and premolar). She underwent the modified lip reposition and was recalled for the follow up after one week and she showed some inconvenience because of the tension of the sutures and some pro surgical swelling but she was not fully satisfied with the result and rated her satisfaction 4 on the scale of 5 . After one month, she was called for follow up and there was also some inconvenience because the loss of sensitivity of the upper lip but there was no exposure of the gum during full smile the patient was satisfied with the elastic result but still afraid about the side effects and she rate her satisfaction level with 4/5. Vitamin B 3,6,12 was prescribed for one month (1 tablet daily) and the sensitivity of the upper lip was normal again when the patient was called for follow up after 3 months and no exposure of the gum during full smile was recorded and the patient was fully satisfied. The result was stable after 6 month.

Case 3:

A 20-year-female patient came to the department of periodontics with an excessive appearance of the gum in full-smile (7 mm). She underwent the modified lip reposition and was recalled for the follow up after one week and she showed some inconvenience because of swelling but she was fully satisfied with the result. After one month she was called for follow up and there was no inconvenience and the exposure of the gum during full smile was only 1 mm and the patient was fully satisfied. The result was stable after 3 months and 6 months. This patient reported a feeling of dry mouth because of the shallow vestibule.

RESULTS AND DISCUSSION:

All three patient included in this study were fully satisfied at the end of the monitoring period (6 months), regarding some side effects in the early period after surgery like the inconvenience because of the tension of the sutures which lasts for the first week after surgery, the swelling which is caused by the surgical trauma and lasts for 2 weeks, the feeling of dry mouth caused by the shallow vestibule and temporary numbness of the upper lip which is caused by the cutting of the endothelial neural networks.

The results were stable during the monitoring period and no recurrence of the gummy smile was recorded.

CONCLUSION:

The modified lip reposition is a reliable surgical procedure in management of gummy smile caused by hyperactive upper lip.

REFERENCES:

1. GARBER, D.A., SALAMA, M.A. The aesthetic smile: Diagnosis and treatment. Periodontol 2000.1996;11:18–28.
2. OLIVEIRA, M.T., MOLINA, G.O., FURTADO A., GHIZONI, J.S., PEREIRA, J.R. Gummy smile: A contemporary and multidisciplinary overview. Dent Hypotheses 2013;4:55-60.
3. MATTHEWS, T.G. The Anatomy of a Smile. J Prosthet Dent. 1978;39(2):128-134.
4. TJAN, A.H., MILLER, G.D., THE, J.G. Some esthetic factors in a smile. J Prothet Dent. 1984;51(1):24-28.
5. HULSEY, C.M. An esthetic evalution of lip-teeth relationships present in the smile. Am J Orthod. Dentofacial Orthop. 1970;57(2):132-144.
6. CARNEGIE, D. How to win friends and influence people. Simon and Schuster; 1936. 103.
7. PECK, S., PECK, L., KATAJIA, M. The gingival smile line. Angle Orthod. 1992;62(2):91-100; discussion 101-102.
8. PECK, S., PECK, L., KATAJIA, M. Some vertical lineaments of lip position. Am J Orthod. Dentofacial Orthop. 1992;101(6):519-524.
9. HUNT O., JOHNSTON, C., HEPPER, P., BURDEN, D., STEVENSON, M. The influence of maxillary gingival exposure on dental attractiveness ratings. Eur J Orthod. 2002;24(2):199-204.
10. RUBENSTEIN, A., KOSTIANOVSKY, A., Cosmatic surgery for the malformation of the laugh: Orginal Technique. Prensa Med Argent. (60)952.
11. HWANG, W.S., HUR, M.S., HU, K.S., SONG, W.C., KOH, K.S., BAIK, H.S., et al. Surface anatomy of the lip elevator muscles for the treatment of gummy smile. Angle Orthod. 2009;79(1):70-77.

FIGURES:

Figure 1: The first clinical case (A 20-year-female patient with a gummy smile of 5 mm). She underwent the modified lip reposition. The result is after 3 months of follow up.

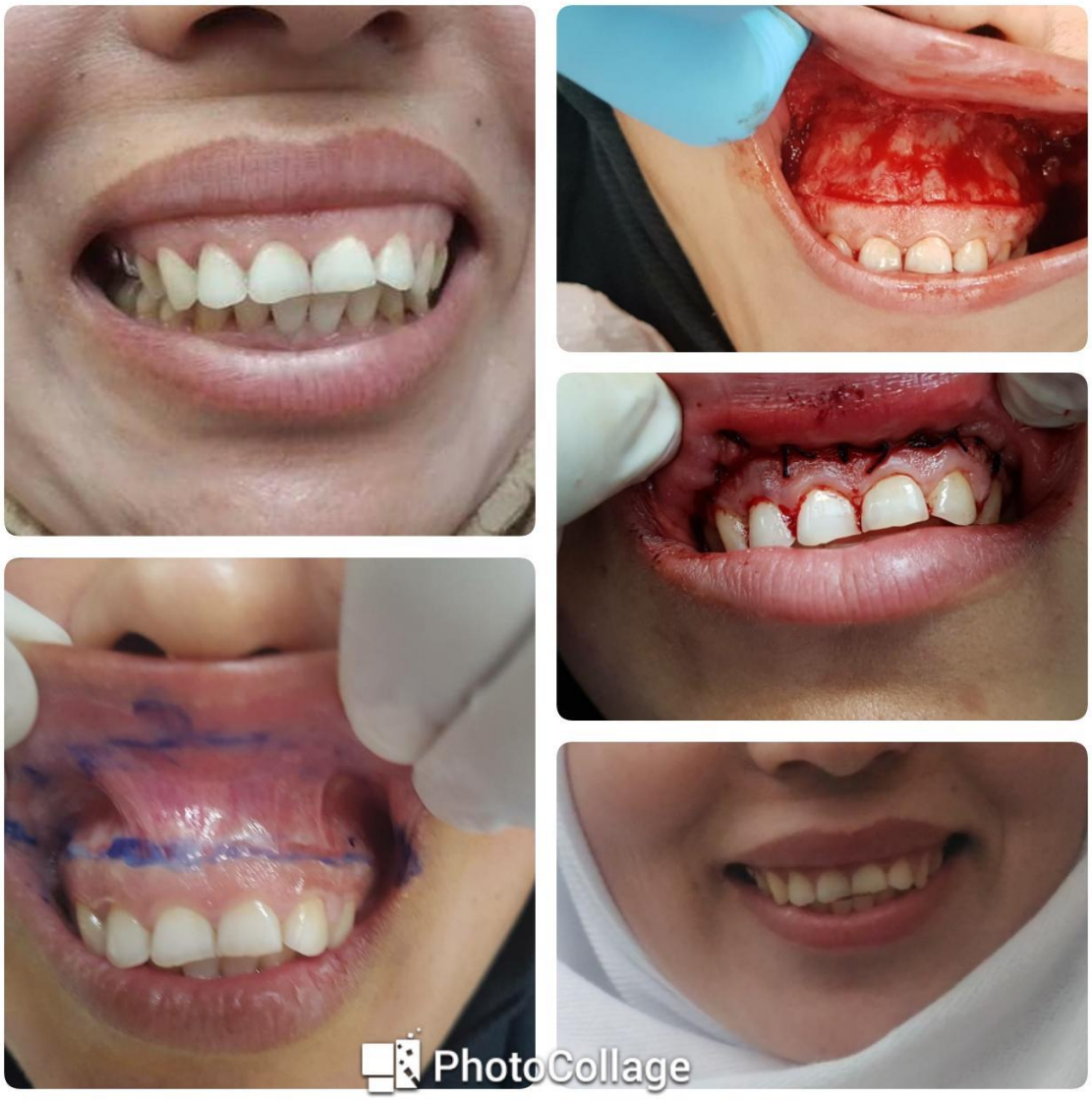

Figure 2: The second clinical case (A 21-year-female patient with a gummy smile of 5 mm). She underwent the modified lip reposition. The result is after 3 months of follow up.

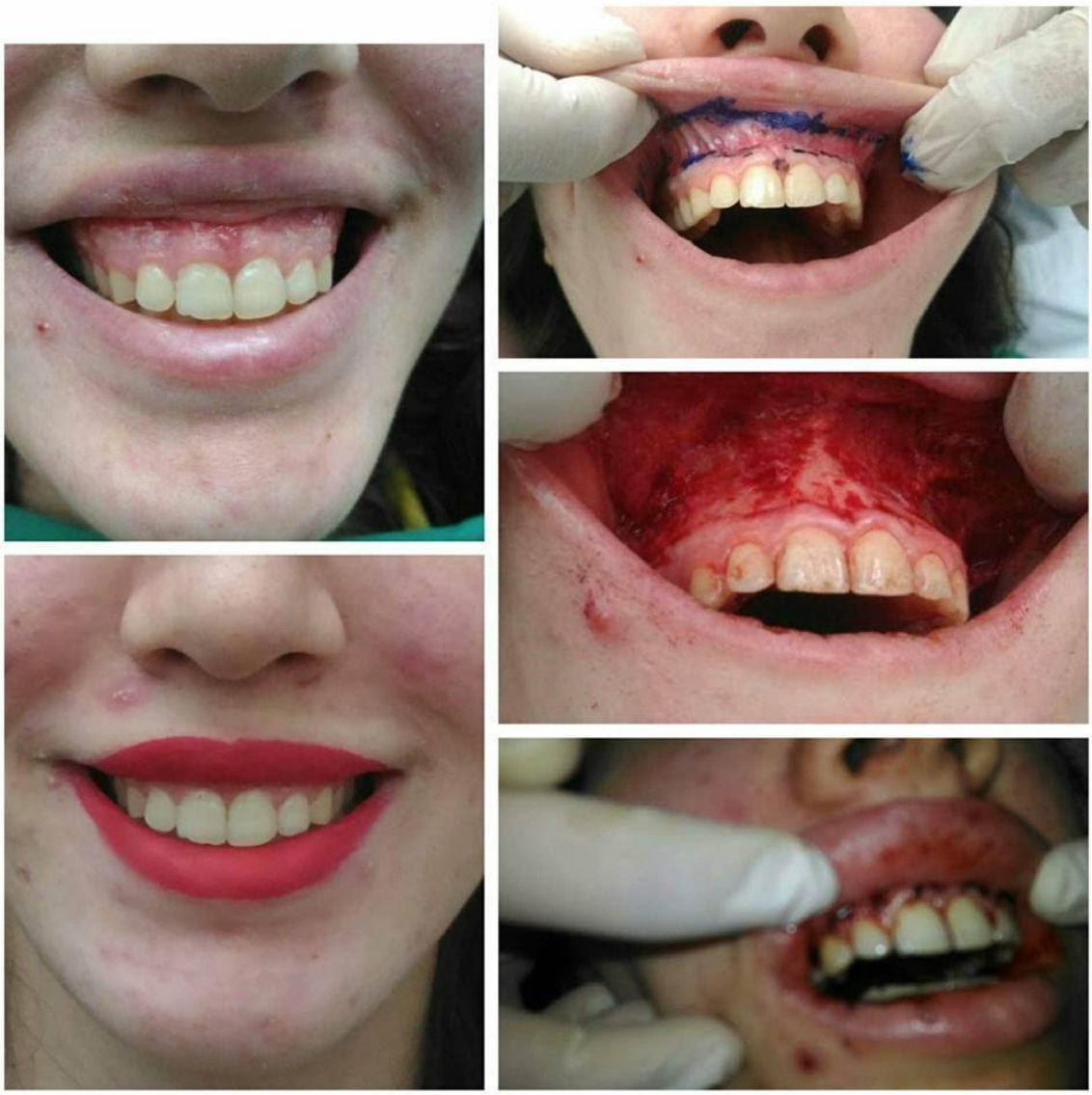

Figure 3: The second clinical case (A 19-year-female patient with a gummy smile of 7 mm). She underwent the modified lip reposition. The result is after 3 months of follow up.