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REPOSITIONING YOUR LIPS: AN ALTERNATIVE COSMETIC TREATMENT FOR GUMMY SMILES

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ABSTRACT

"Gummy smiles" are also known as excessive gingiva displays. Many people are concerned about the appearance of their maxillary gingiva when they smile and this causes excess esthetic tissue to be exposed on the surface. There are many factors that cause gummy smiles, including jaw deformities, tooth malposition, and a short or hyperactive upper lip. Orthognathic surgery, lip repositioning, orthodontic treatment, and botox injections are among the various treatments that have been advocated for excessive gingival display. In the last few years, lip repositioning has become popular as a method for treating excessive gingival visibility. In addition, the surgical outcome is more predictable and there are fewer postoperative complications. This case report describes the lip repositioning techniquewhich was performed on a patient undergoing periodontal treatment.

KEYWORDS: Gummy Smile, Excessive Gingival Display, Lip Repositioning.

INTRODUCTION

People are often judged by their smiles. A beautiful smile is determined by the harmony between the teeth, lips, and gums.[4] Healthy and harmonious gingiva is an essential component of a beautiful smile. A coordinated multidisciplinary approach is required to create a beautiful smile. Gummy smile is an aesthetic concern for many individuals. A gummy smile is defined by an excessive amount of gingival exposure caused by an imbalance in the ratio of gingiva to tooth. Greater gingival exposure than four millimeters is considered abnormal. The smile line is defined as the line drawn between the upper lip and the teeth or gingiva above the upper incisor and canine.Scores for teeth and gums are as follows[1]:

Score 0: Low smile line: Interdental gingiva: <25% visible, gingival margin: visible, teeth masked

Score 1: Average smile line: Interdental gingiva: 25-75% visible, Gingival margin: visible on individual teeth

Score 2: High smile line: Interdental gingiva :>75% visible, Gingival margin: <3mm visible (overall)

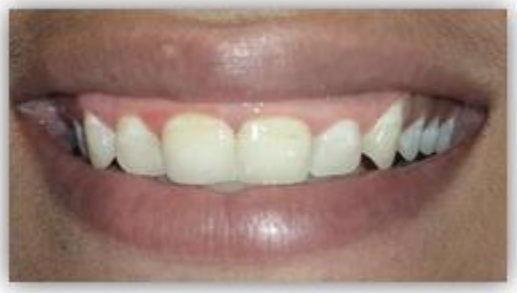
Score 3: Very High smile line: Interdental gingiva: completely visible, Gingival margin: >3mm wide maxillary band of gingiva visible beyond the mucogingival line"gummy smile".

Proper diagnosis of the etiological factors is important to choose the appropriate treatment plan. Excessive gingival display may be caused by several factors. Discrepancies between the dentition and the jaws may cause this condition. An oral cavity that is short clinically, with excessive gingiva, with excessive hyperplasia, with altered passive eruption, and with increased extrusion constitutes dentoalveolar lesions. There are also non dentoalveolar causes such as vertical excess of maxilla, incompetent upper lip, and hyperactive upper lip.[2] Various surgical approaches can be used for excessive gingival display. There are several methods of repositioning your lipsto achieve the desired shape, such as orthodontic treatment, lip repositioning, orthognathic surgery, and non-surgical techniques like botulinum toxin injections. In case of anterior dentoalveolar protrusion, orthodontic intrusion is used, and surgical management of vertical maxillary protrusion is performed with orthognathic surgery. Gummy smile may be caused by hyperactive upper lips, and several treatment options exist, including botulinum toxin, lip elongation through surgery, lip decompression, lip myotomy, and partial removal, and lip repositioning.[3] Rubinstein and Kostianovsky introduced lip repositioning in medical plastic surgery in 1973.[4] Rosenblatt and Simon modified the procedure and introduced it in dentistry in 2006. Treatment of excessive gingival display with this technique is less invasive.[5] This case report describes the lip repositioning technique which was performed on a patient undergoing

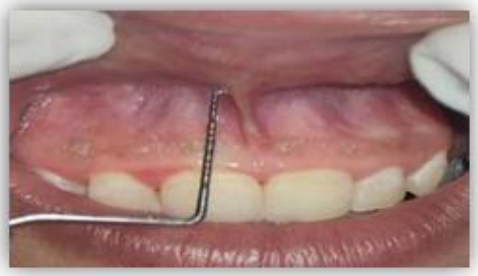
orthodontic treatment to decrease the gummy smile.

CASE REPORT

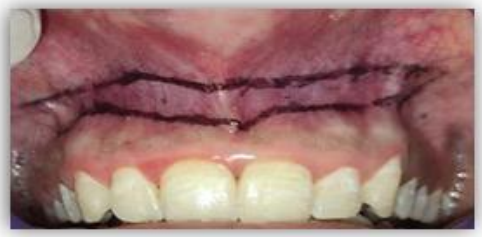
In the Department of Periodontology, a 25-year-old woman was referred for treatment for excessive gingival display. Clinical examination revealed incompetent lips and excessive maxillary gingival display of about 3-4mm while smiling. (Figure1)



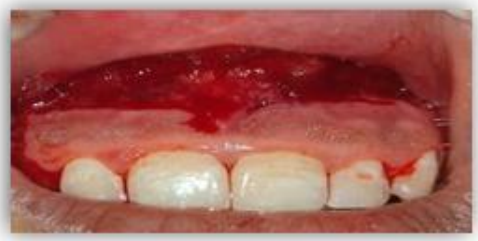
The patient had no relevant medical history or family history. During the course of treatment, the patient was informed about all the benefits and complications of the treatment. This procedure required the patient's informed consent. It was our goal to reduce the excessive gingival display in order to achieve an aesthetic smile. Prior to surgery, the patient was advised to rinse her mouth with 0.2% chlorhexidine mouthwash. Before surgery, pre-operative photographs were taken. (Figure 2)

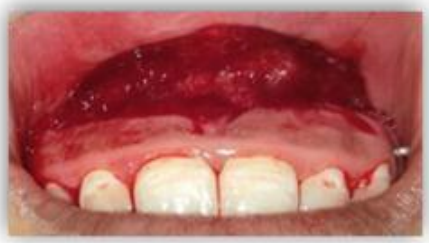


Betadine 2% was used for extra-oral disinfection. Local anesthetic was used to anesthetize the surgical area (lignocaine 2% with epinephrine 1:100,000). On the surgical area, the outline of the incisions was marked with a sterile marking pencil. (Figure 3).

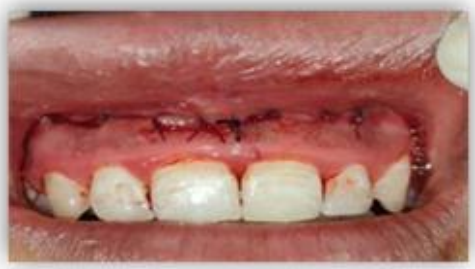


An incision was made at the mucogingival junction between the mesial side of the right and left premolar. In the labial mucosa, approximately 10-12 mm apical to the mucogingival junction, a partial thickness incision was made parallel to the first incision. Two incisions were joined on one side to form an elliptical shape. A strip of epithelial tissue from the flap was excised to expose the connective tissue underneath. (Figure 4 & 5).

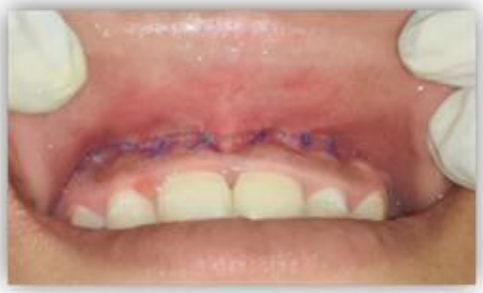




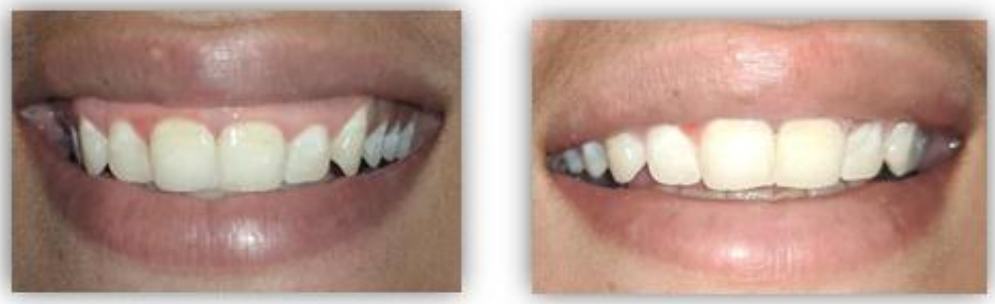
The mucosal flap was then advanced to the mucogingival junction and sutured with interrupted simple sutures and the coe pack wasgiven. (Figures 6 & 7).



The lip midline and the midline of teeth are correctly aligned. Analgesics were prescribed for postoperative pain management, and appropriate antibiotics were given to the patient. In response to postoperative instructions, the patient was advised to limit lip movements for a week and to apply extra ice packs to the mouth. The patient was recalled after 10 days [figure 8]. For a week following surgery, the patient complained of mild discomfort. A satisfactory level of healing was observed.



The pre and post photographs of the patient was taken for observation [figure 9].



DISCUSSION

A multifactorial etiology can explain excessive gingival display, and it is necessary to treat it in a sequential manner.[6] A correct treatment protocol requires that we have a complete understanding of the etiology. In order to correct excessive gingival display, myotomy and orthognathic surgery have been considered, as well as less invasive procedures such as lip repositioning, crown lengthening, and botulinum toxin injections.[7] Despite being almost identical in their treatment outcomes, lip repositioning surgery, botulinum toxin therapy and myotomy can reduce gingival display. Dos santos-pereira et al. noted that many nonsurgical ways of treating excessive gingival display, including botulinum toxin injections, may yield similar results to lip repositioning but require multiple injections to keep results stable.[8] Lip repositioning surgery involves a more invasive techniques than myotomy. During myotomy, postoperative pain and discomfort are common side effects.[9] Lip repositioning surgery has become more popular in recent years and is less invasive and has fewer postoperative complications than other approaches. Several alterations were made to the technique after it was first introduced by Rosenblatt and Simon in 2006. Alveolar mucosa was partially excised by placing an elliptical incision at the alveolar mucosa and about ten to twelve millimeters were removed. In a case study of 8 months, they achieved satisfactory results. Humayun et al. also achieved good outcomes after 1 year of follow-up.[10] An orthodontic patient underwent the lip repositioning after 1 year of orthodontic treatment. An esthetic smile has been improved through a multidisciplinary approach. In a study conducted by Jacobs et al. in 2013, a mean reduction of gingival display of 6.4 ± 1.5 was observed in seven patients who had undergone lip repositioning surgery. Vital et al. detailed the case of two patients treated with modified lip repositioning techniques and reported significant improvement in gingival exposure and esthetic satisfaction at 6 months. A study performed by Farista et al. combined laser assisted crown lengthening with lip repositioning technique and reported satisfactory results at 6-months post-surgery, but noted mild excessive gingival display by 3.4 mm recurrence at 1-year follow-up. A systematic review by Tawfik et al. showed that lip repositioning had a beneficial effect. The lip repositioning procedure is safer, less invasive, less time-consuming and more affordable than other types of lip enhancement. The mostserious complication is mucocele formation. Lip repositioning surgery is contra-indicated in certain cases where there is a minimal attached gingiva, causing difficulties in flap design, stabilization, and suturing. This procedure cannot be used on patients with severe vertical maxillary excess.In this case, lip repositioning technique provided a successful outcome for the excessive gingival display. In addition to improving patient compliance, this technique also provided satisfactory healing results. The vast majority of

published cases of lip repositioning with a 12 month or longer follow-up comes from case reports. In order to assess the long-term effectiveness of thistechnique, more research and studies should be conducted with larger sample sizes and follow-ups.

CONCLUSION

A periodontal treatment plan must include aesthetics. In many patients, a "gummy smile" – excessive gingival display – affects their smile esthetics and is a source of anxiety. An emerging treatment for excessive gingival display - lip repositioning - has become effective and promising technique. In this case report, the lip repositioning technique resulted in a satisfactory outcome. In addition, this procedurehas fewer side effects, it's cost-effective, and it's patient-friendly. If a patient is unwilling to undergo orthognathic surgery, it can be thetreatment of choice. It is necessary to conduct further studies to assess the stability of this procedure over time.

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