

# Surgical Lip Repositioning: An Interdisciplinary Approach for Treating Excessive Gingival Display

Dr. Sanghamitra Ghosh

Assistant Professor, New Horizon Dental and Research Institute, Sakri, Bilaspur (C. G), India

Email: [dimpi2088\[at\]gmail.com](mailto:dimpi2088[at]gmail.com)

**Abstract:** *This study explores the efficacy of surgical lip repositioning as a treatment for excessive gingival display, often termed gummy smile. It includes a case report demonstrating the surgical technique and its outcomes, providing a comprehensive review of the procedure and its potential as a less invasive alternative in aesthetic rehabilitation.*

**Keywords:** Gummy Smile, Excessive Gingival Display, Surgical Lip Repositioning, Aesthetic Rehabilitation, Dental Aesthetics

## 1. Literature Survey

The significance of this article lies in its presentation of surgical lip repositioning as a less invasive alternative treatment for excessive gingival display, a common aesthetic concern in dental medicine.

## 2. Introduction

A beautiful smile is the prettiest thing that one can wear. Any anatomical imbalance between gingiva and teeth can lead to a gummy smile, also known as excessive gingival display.<sup>1</sup> A normal smile is considered a gingival display of 1 - 2 mm from the inferior border of the upper lip to the gingival margin of the central incisor.<sup>2</sup> If this distance exceeds more than 4 mm, it is classified as unattractive, which negatively impacts the patient's emotional and psychological status.<sup>3</sup> These people often show a lack of confidence, a restrained smile, or place their hand on their mouth while smiling.<sup>1</sup>

In a study done by Tjan AHL et al. on 454 individuals, 207 men and 247 women aged 20–30 reported that 14% of females and 7% of males had excessive gingival display.<sup>2</sup>

Lip repositioning can treat 'gummy smiles'. It is a simple surgical procedure to reposition the lip. This procedure limits the muscle pull of the elevator lip muscles, thereby reducing the gingival display while smiling. This procedure is quite safe and predictable, with minimal risk or side effects.<sup>4</sup>

### Classification of Lip Line:

The lip line has been classified as high, medium, or low.

**High lip line:** Shows a large exposure of gingiva that extends from the inferior border of the upper lip to the free gingival margin.

**Medium lip line:** Which is the most attractive in western culture, has a nominal exposure of 1 - 3 mm of gingiva from the apical extent of the free gingival marginal to the interior border of the upper lip.

**Low lip line:** Only a portion of the teeth are exposed below

the inferior border of the upper lip.<sup>2</sup>

### The Aetiology of Excessive Gingival Display

- 1) Delayed eruption: where the gingiva fails to complete the apical migration over the maxillary teeth to a position that is 1mm coronal to the CEJ.
- 2) Restoring the normal dentogingival relationship can be achieved by aesthetic crown lengthening, which is highly effective in treating patients with delayed eruption.
- 3) Compensatory eruption of the maxillary teeth with concomitant coronal migration of the attachment apparatus, which includes the gingival margin.
- 4) Vertical maxillary excess, where there is an enlarged vertical dimension of the midface and incompetent lips. The treatment aspect involves orthognathic surgery to restore normal inter - jaw relationships and reduce the gingival display.<sup>3</sup>

If the upper lip moves in an apical direction and exposes the dentition and excessive gingiva, then surgical lip repositioning can be done to reduce the labial retraction of the elevator smile muscle and minimize the gingival visibility.<sup>5</sup> This procedure was first described in the plastic surgery literature in 1973 and then published in the dental literature.<sup>6</sup>

It is important to restore the aetiology responsible for the excessive gingival display. The lips are responsible for the excessive gingival display. Lip repositioning is an additional treatment modality for patients with lip hypermobility that exposes undesired gingiva in a smile.<sup>7</sup>

This article gives a short review of lip repositioning and a case report of the surgical technique that was used to reduce gingival display.<sup>8</sup>

## 3. Case Report

A 23 - year - old female patient reported to the Department of Periodontology, New Horizon Dental College and Research Institute, Chhattisgarh, with a chief complaint of excessive gum visibility while smiling. Patient is undergoing orthodontic therapy for past 2 years. The patient's medical history was non - contributory, and there were no contraindications to surgical treatment. Clinical examination showed stains that were mild with calculus and bleeding on

probing was present. Probing pocket depth ranged from 1 - 3 mm, and clinical attachment loss was 0 mm with a gingival display of 5 mm from the right maxillary 1st premolar to the left maxillary 1st premolar.

#### 4. Procedure

Disinfection of the extraoral and intraoral sites was done with 2% betadine. Topical anesthesia, lidocaine (nummit), was sprayed at the surgical site. Local anesthesia (lignocaine HCL with 2% epinephrine, 1: 200, 000) was infiltrated from the right maxillary 1st molar to the left maxillary 1st molar in the labial vestibule, with additional infiltration to achieve hemostasis.

A sterile, indestructible pencil was used to outline the incisional area on a dried tissue. A partial - thickness incision was made, with the inferior border of the incision at the mucogingival line and the superior border parallel to the lower border and at the distance between the gingival displays.

(The distance between the upper and lower incision margins is 10–12 mm.) Both incisions were connected at the mesial ends of the 1st premolars on either side to create an elliptical outline.

15 - number surgical blade was used for the incision, and the epithelium was removed in the incision outline, leaving an

underlined submucosa.

Bleeding can be controlled by giving additional local anesthesia. Tissue tags were removed, and the two incision lines were approximated with an (Ethicon suture).

Proper alignment should be maintained while approximating both the incision lines (lip midline and teeth midline). Once the flaps were stabilized, continuous interlocking sutures were used to approximate both flaps. A pressure pack was applied for hemostasis.

Post - operative instructions include things like placing ice packs over the upper lip for several hours and avoiding hot and spicy food. Restricted facial movement for 1 week; use only 0.12% chlorhexidine gluconate twice daily for 2 weeks; do not brush.

Post - operative pain was managed with NSAIDs (Paracetamol 650 mg tid for 3 days) and Antibiotics (Amoxicillin 500 mg tid for 5 days).

A follow - up was also done.

After 2 months of healing, scar formation was observed. A follow - up examination revealed reduced gingival display. Our results indicate good stability at 1 - year follow - up.

#### *Pre - Operative Photographs Showing*



**Figure 1:** Anterior and Lateral Views



**Figure 2:** Anterior View



**Figure 3:** Right Lateral View



Figure 4: Left Lateral View

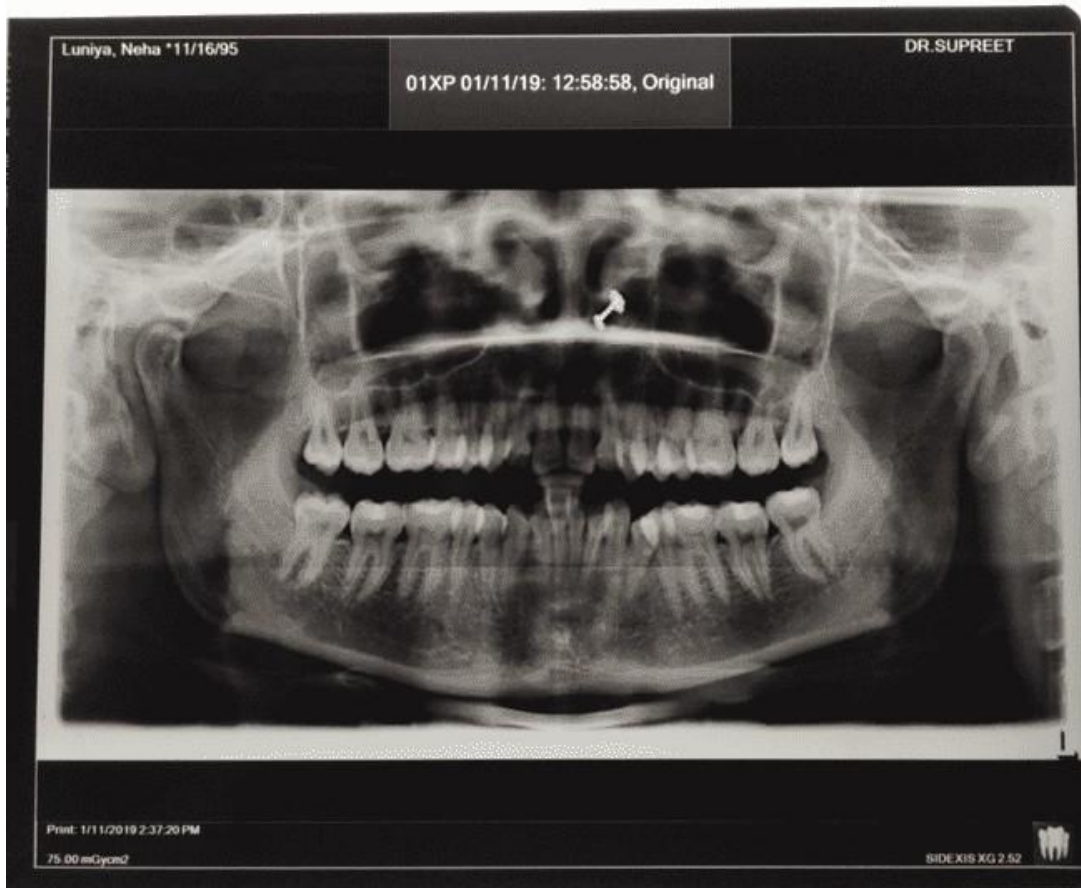


Figure 5: Oral Pantomogram

*2 Years of Orthodontic Treatment*



Figure 6: Anterior View



Figure 7: Right Lateral View





Figure 8: Left Lateral View



Figure 10: Excised Epithelial Tissue

*Intra Operative Views*



Figure 7: Incision Given



Figure 11: Resorbable Suture Placed



Figure 8: Incision Area Outlined



Figure 12: Coe Pack



Figure 9: Elevation of Partial Thickness



Figure 13: Immediate Post – Operative



**Figure 14:** 7 Days Post – Operative



**Figure 15:** 21 Days Post - Operative

## 5. Conclusion

Surgical lip repositioning is a promising, innovative procedure for reducing excessive gingival display. It is a less invasive approach with minimal postoperative complications. While the longterm stability of the results needs further investigation, this technique holds promise as an alternative treatment modality in aesthetic rehabilitation.

## References

- [1] Ramesh A, Vellayappan R, Ravi S, Gurumoorthy K. Esthetic lip repositioning: A cosmetic approach for correction of gummy smile - A case series. *J Indian Soc Periodontol* 2019; 23: 290 - 294.
- [2] Tjan AH, Miller GD, The JG. Some esthetic factors in a smile. *J Prosthet Dent*.1984 Jan51: 24 - 8.
- [3] K D, Yadalam U, Ranjan R, Narayan SJ. Lip repositioning, an alternative treatment of gummy smile - A case report. *J Oral Biol Craniofac Res*; 8: 231 - 233.
- [4] Foudah MA. Lip repositioning: An alternative to invasive surgery a 4 year follow up case report. *Saudi Dent J*.2019; 3: 78 - 84.
- [5] Garber DA, Salama MA. The aesthetic smile: diagnosis and treatment. *Periodontol* 2000.1996; 11: 18 - 28.
- [6] Faus - Matoses V, Faus - Matoses I, Jorques - Zafrilla A, Faus - Llácer VJ. Lip repositioning technique. A simple surgical procedure to improve the smile harmony. *J Clin Exp Dent*.2018; 10: 408 - 412.
- [7] Gaddale R, Desai SR, Mudda JA, Karthikeyan I. Lip repositioning. *J Indian Soc Periodontol*.2014; 18: 254 -

8.

- [8] Jananni M, Sivaramakrishnan M, Libby TJ. Surgical correction of excessive gingival display in class I vertical maxillary excess: Mucosal strip technique. *J Nat Sci Biol Med*.2014; 5: 494 - 8.
- [9] Matthews TG. The anatomy of a smile. *J Prosthet Dent*.1978; 39: 128 - 34.
- [10] Simon Z, Rosenblatt A, Dorfman W; *The Journal of Cosmetic Dentistry*; 2007: 23: 1.