Interdisciplinary Treatment of a "Gummy Smile" Using Digital Smile Design

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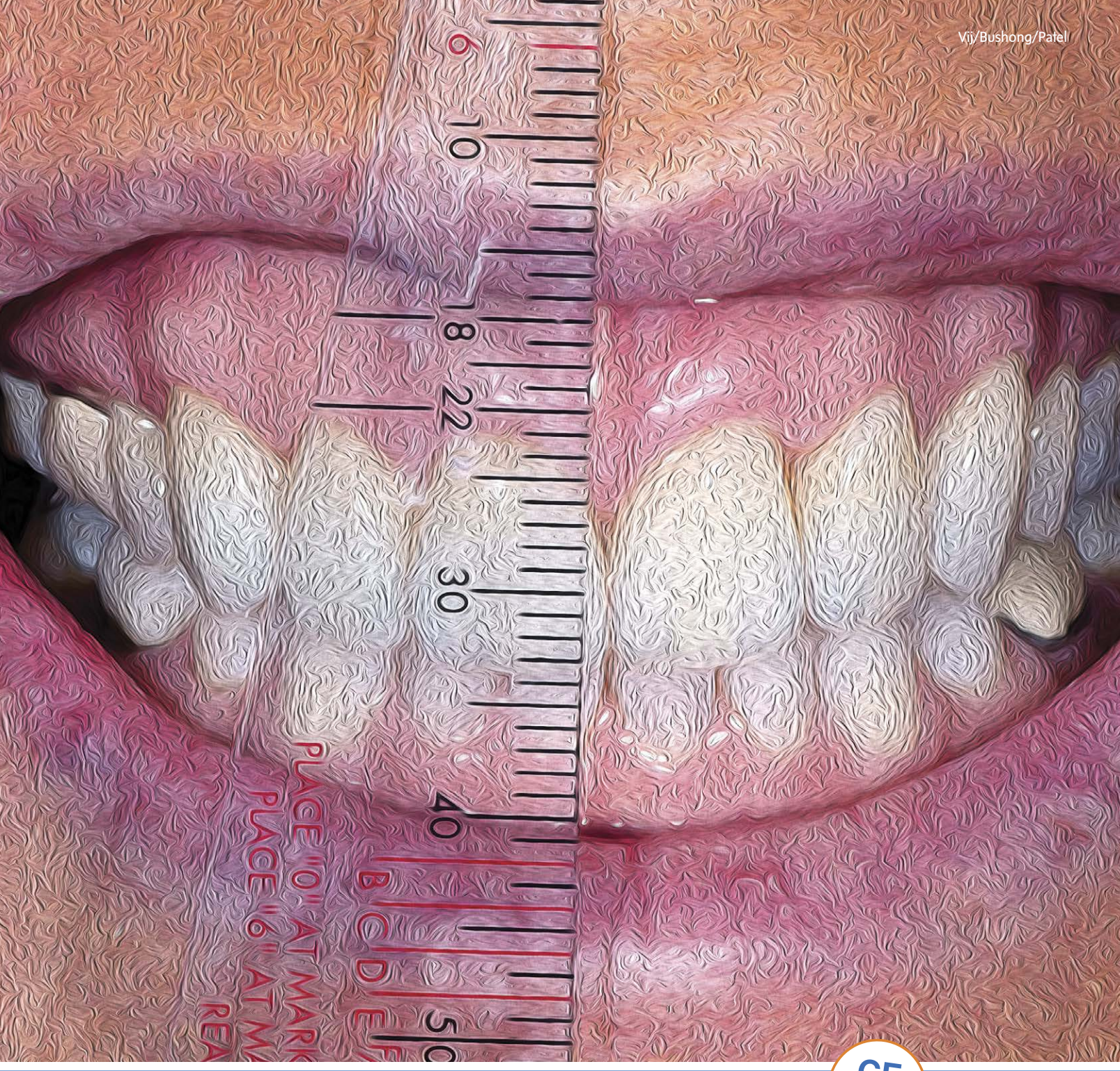
Abstract

"Gummy smile," or excessive gingival display on smiling, is a complex problem to treat. This case report addresses the diagnosis and treatment of a patient with excessive gingival display from a hypermobile lip and dentoalveolar extrusion secondary to attrition. A simulated treatment plan was created using digital smile design to discuss treatment options and coordinate therapy. Crown lengthening, ceramic veneers, and lip-repositioning surgery were accomplished with an acceptable esthetic result. Digital smile design represents a quick and cost-effective method for simulating, discussing, and presenting a treatment plan while enhancing patient understanding and acceptance as well as coordinating treatment with specialists and dental laboratory technicians.

Key Words: gummy smile, gingival display, digital smile design, veneers, lip-repositioning surgery



Learning Objectives

CE CREDIT

After reading this article, the participant should be able to:

1. Identify the etiology of a "gummy smile."
2. Understand and differentiate treatment options for a gummy smile.
3. Evaluate the advantages of digital smile design in the treatment of a gummy smile.

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Introduction

Gummy smile is a commonly used term to describe excessive gingival display from the overexposure of maxillary gingival tissue during a smile.[1] In severe cases, overexposure is present when lips are at rest. Generally, the more gingival tissue displayed during a smile, the less esthetic the smile appears. Gummy smile typically is more prominent in women, and the condition improves with age due to a loss of muscle tone in the lips.[2] Because both lips droop as muscle tone is lost, exposure of maxillary incisors decreases and exposure of mandibular teeth increases.

One cause of gummy smile may be hypermobility of the upper lip elevator muscles. During a full smile, the average upper lip mobility ranges from 7 mm to 8 mm. When upper lip mobility is greater than 8 mm (gingival display > 2 mm when smiling), the lip is considered hypermobile.[2] When this is the cause, the condition may be treated with injections of botulinum toxin type A (Botox, Allergan; Madison, NJ),[3] lip-repositioning surgery,[4,5] or a combination of both.[6]

Altered passive eruption may be another cause. When gingival margins fail to recede apically to the cementoenamel junction after tooth eruption, teeth can appear short and square. Depending on the classification of the altered passive eruption, this condition may be treated with gingivectomy with or without osseous resection or apically positioned flaps.[7]

Another cause may be increased vertical maxillary growth (vertical maxillary excess). This condition can be treated by decreasing lower facial height with orthodontic, periodontal, and restorative therapies with surgical intervention.[6] Maxillary dentoalveolar extrusion, another possible cause, may lead to a deep bite with anterior overeruption, even though tooth proportions are normal.[6] When the incisal edges of the maxillary teeth are hidden by the lower lip in full smile, excessive tooth and gingival display may exist at rest.[6] This condition can be treated with orthodontic or restorative therapy or with crown-lengthening procedures.[6] A short upper lip and plaque- or drug-induced gingival enlargement are other possible causes of excessive gingival display.[6]

"Teeth were lengthened incisally and gingivally using principles of facially generated treatment planning, with the maxillary central incisor display at rest and full smile as a starting point."

Digital smile design (DSD) is an innovative technique that digitally alters a patient's smile to produce a more desirable or esthetic effect for the purpose of interdisciplinary treatment planning and to present a visual representation of the treatment plan to the patient. Although several software programs and techniques can be used to create a DSD, most use a stock photo of esthetically proportioned teeth and overlay that image on an image of the patient's face.[2] One program, Photoshop Smile Design (Adobe; San Jose, CA), allows clinicians to use and alter the patient's own dentition to more esthetic proportions and shapes.[8] Thus, orthodontic treatment, intraoral bleaching, or crown lengthening can be simulated. The software allows measurements to be correlated to the reality using a conversion scale based on the intraoral measurement of teeth #8 and #9 (image pixels converted to millimeters). Further, Photoshop Smile Design allows toggling between views with lips showing or retracted for a more complete visualization and analysis of dentition in a patient with a low smile line.

This case report describes the interdisciplinary treatment of a gummy smile using DSD to help with the treatment plan and communicate with the patient and the interdisciplinary dental team.

Case Report

Examination, Findings, and Diagnosis

A 56-year-old female presented to a dental school clinic with a chief complaint of short and worn-down anterior teeth with some chipped edges. She expressed concern that her gums were too visible when she smiled and indicated that her teeth were longer when she was younger. Her medical history was noncontributory, and she reported no use of any medications or drugs.

A comprehensive intra- and extraoral examination was conducted, including a full series of intraoral radiographs, a panoramic radiograph, and periodontal charting. The patient reported a history of previous orthodontic therapy with extraction of all first premolars. The periodontium appeared healthy, with normal pocket depths and no signs of inflammation, recession, or attachment loss. Existing restorations showed signs of occlusal wear and initial signs of margin deterioration, but no interventions were considered necessary.

The patient then underwent an esthetic evaluation, which included profile images and a series of full-face intra- and extraoral photographs with lips at rest and at maximal smile **(Fig 1)**. Other images obtained evaluated lip mobility, incisor display, buccal/facial views of the occlusion, and teeth apart to evaluate incisal/occlusal surfaces with cheeks retracted. A digital camera (D7000, Nikon; Melville, NY) with a 105-mm macro lens and twin flashes was used. The width and height of teeth #8 and #9 were measured intraorally using a caliper and recorded. Images were analyzed using measuring tools in Adobe Photoshop.

Levels of gingival zeniths were noted. Images with lips at rest were compared with images with full smile to evaluate upper lip length and mobility. The apparent proportion for width and height of #8 and #9 was measured and expressed as a percentage.

Figure 1: Preoperative images. Full face (a and b). Lips at rest (c). Extraoral (d-f). Intraoral retracted (g-l). Maxillary and mandibular occlusal (m and n).

Figure 2: Preoperative apparent height-to-width ratios of the maxillary anterior teeth.

Figure 3: Digital smile design using lip repositioning to simulate maxillary anterior crown lengthening and veneers from #5 to #12.

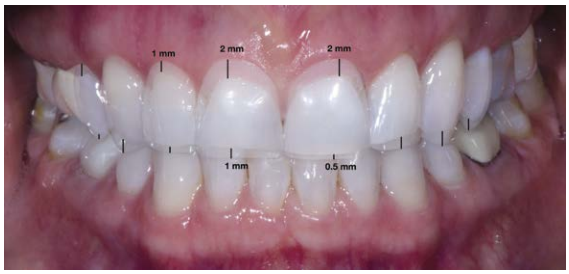


Figure 4: Digital smile design overlaid on the preoperative image to measure the length and position of teeth and gingival margins in millimeters.

Figure 5: Diagnostic wax-up simulating anterior veneers.

Apparent width of successive teeth was measured and expressed as a proportion with the tooth mesial to it. For example, apparent proportion of #10 was calculated with apparent width of #9 **(Fig 2)**.

Esthetic evaluation indicated the upper lip length was normal, but lip mobility upon smiling was excessive. The patient had less than normal display of #8 and #9 at rest. The gingival zeniths were more coronal than the canines, and gingival heights were varied and asymmetric. The patient displayed up to the mesial half of the facial surface of #3 and #14 at full smile. There was moderate to severe incisal wear on the maxillary anterior teeth and uneven incisal edges. The anterior occlusal plane coincided with the posterior occlusal plane. Periodontal evaluation and bone sounding revealed coronal migration of soft tissue and osseous attachment accompanying dentoalveolar extrusion. The patient had short clinical crown heights, and #8 and #9 appeared wider than long, which is the opposite of what is considered acceptable. Teeth #6 and #11 appeared to be wider in proportion to #7 and #10. Thus, the diagnosis was excessive gingival display on smiling, with an etiology of anterior dentoalveolar extrusion secondary to incisal attrition and concomitant coronal migration of gingival margins and a hypermobile lip.

Treatment Plan

Treatment options included maxillary facial crown lengthening for teeth ##4-13 or orthodontic intrusion to correct gingival heights and reduce gingival display. Following that, facial ceramic veneers for ##4-13 were proposed to create more esthetic proportions.[5,9,10] Lip-repositioning surgery was suggested to reduce upper lip mobility and gingival display at smile.[4,5] Finally, a maxillary full-arch acrylic occlusal splint was recommended.

Digital Smile Design

A DSD was made in Photoshop using the esthetic evaluation images and intraoral tooth measurements to simulate maxillary anterior crown lengthening and subsequent veneers from #5 to #12.[11] Teeth were lengthened incisally and gingivally using principles of facially generated treatment planning, with the maxillary central incisor display at rest and full smile as a starting point **(Fig 3)**. The DSD was overlaid on a preoperative image of the patient to measure differences in the length of the teeth and the gingival margins in millimeters **(Fig 4)**. This image enabled interdisciplinary treatment planning and discussion between the restorative dentist, periodontist, and dental ceramist. Measurements also allowed the periodontist to visualize and plan crown-lengthening surgery.

At the treatment plan appointment, the patient was shown the pretreatment images and the DSD. Treatment options, sequences, time frames, and finances were discussed. The pros and cons of crown lengthening versus orthodontic extrusion were weighed. She was extremely pleased with the DSD, requesting only minor changes to the length and shape of the incisal edges. She declined orthodontic extrusion and chose crown lengthening and veneers.

Laboratory Communication

From the DSD measurements, the dental ceramist fabricated a diagnostic wax-up on a stone cast (Fujirock, GC America; Alsip, IL) **(Fig 5)**. The DSD provided the ceramist with a visual reference of the desired amount of gingival and incisal lengthening of the maxillary anterior teeth. A vacuum-formed stent was prepared on the wax-up and scalloped to follow desired gingival height and contour. This stent was a guide for initial surgical incision and indicated desired gingival height after flap reflection and osseous recontouring. An alternative to this technique uses a digital impression from an intraoral scanner, and a virtual wax-up and surgical stent are then created using software. A resin model is then printed three dimensionally for fabrication of the vacuum-formed stent, or the stent itself is printed.[12]

Esthetic Crown-Lengthening Surgery

Crown-lengthening surgery was planned with a full-thickness apically positioned flap. Using local anesthesia (Lignospan, Septodont; Lancaster, PA), the vacuum-formed surgical stent was placed on the patient's maxillary arch, with gingival extensions indicating crown margin positions. Bleeding points were made along the margins with a periodontal probe (Hu-Friedy; Chicago, IL) **(Fig 6)** and gingivectomy was performed from #4 to #13. A full-thickness mucoperiosteal flap was reflected to perform ostectomy and osteoplasty as needed to position the buccal crestal bone 3 mm apical to the desired gingival position **(Fig 7)** and to reestablish biologic width.[13] All osseous recontouring was completed with diamond rotary instrumentation. The maxillary labial frenum exerted tension on the gingival margin when the soft tissue was apically positioned with internal vertical mattress 4-0 chromic gut sterile sutures (Ethicon; Somerville, NJ) interproximally **(Fig 8)**. Using a 15C scalpel (A. Titan; Orchard, NY), frenectomy was performed and sutured with simple, interrupted 4-0 chromic gut sterile sutures.

Veneers

Reduction and records: After 6 months, the soft tissue had healed **(Fig 9)** with adequate stippling and scalloping and no signs of inflammation. The patient was anesthetized for veneers, and the diagnostic wax-up was transferred to the mouth with temporization material (Protemp, 3M; St. Paul, MN) and silicone template (Kerr Dental; Brea, CA). With a depth-cutting bur (834.021, Brasseler USA; Savannah, GA), depth grooves were made facially and incisally through the temporary material to ensure adequate reduction for the ceramic **(Figs 10a & 10b)**. This technique provides adequate space for the ceramic and is less

Figure 6: Bleeding points made along the scalloped gingival margin of the vacuum-formed stent.

Figure 7: Full-thickness mucoperiosteal flap.

Figure 8: Apically positioned soft tissue.

Figure 9: Healing 6 months after crown-lengthening surgery.

Tips For Clinicians

BEGINNER

- Pursue continuing education to gain more in-depth knowledge to comprehensively evaluate patients, taking into consideration ideal dentofacial esthetics as well as dental esthetics.
- Perform a comprehensive intra- and extraoral examination that includes appropriate images, lip and teeth measurements, facebow record, and periodontal evaluation.

INTERMEDIATE

- Consult with relevant specialists in cases with complex multifactorial etiologies to treat the patients in a multidisciplinary manner.
- Utilize digital tools such as a digital smile design or diagnostic wax-ups to plan and coordinate treatment with the patient's entire dental team, including the periodontist and dental technician.
- Present the treatment plan to the patient, along with realistic expectations for proper patient management, including the limitations of the various treatment options.

ADVANCED

- Consider the myriad etiologies that can cause excessive gingival display, including hypermobile lip, vertical maxillary excess, short upper lip, deep bite, dentoalveolar extrusion, altered passive eruption, or drug-induced gingival hyperplasia.
- Allow adequate time for periodontal tissue healing and ensure gingival levels are stable before proceeding with final treatment.

invasive because only necessary tooth structure is prepared.[9,14] Remaining temporary material was removed, and tooth preparations were finalized with fine diamond burs (8856.021, 8856.014, and 8876.009, Brasseler) to ensure smooth margins and no sharp points **(Fig 11)**. A maxillary full-arch conventional polyvinyl siloxane (PVS) final impression (Aquasil, Dentsply; Charlotte, NC) was made using the double-cord technique (Ultrapak, Ultradent Products; South Jordan, UT). A facebow record was made (Kois Dento-Facial Analyzer System, Panadent; Colton, CA) and jaw relation was recorded with registration material (Blue Bite, Centrix Dental; Shelton, CT). Intraoral tooth preparation shade images also were obtained.

Provisionalization: The teeth were provisionalized with a spot-etching technique, in which a spot of phosphoric acid etch (Ultra-Etch, Ultradent) was applied to facial surfaces of the preparations for 20 seconds, then rinsed and dried. A fifth-generation, one-bottle adhesive (Optibond Solo Plus, Kerr Dental) was applied, air-dried and thinned, then light-cured for 20 seconds. Protemp was loaded into the silicone template and placed in the mouth until set. Excess material was removed using carbide burs (ET4 and ET6, Brasseler). Although provisional veneers were splinted, adequate room was left for the patient to use a floss threader in the gingival embrasure to maintain oral hygiene.

The patient remained in provisional restorations for 3 weeks to adapt to the teeth's new length in terms of phonetics and function and to provide enough time to evaluate the esthetics of the tooth morphology and proportion. She adapted well to the increased length of her maxillary anterior teeth and wished to make minor changes to the shape of the provisional restoration, but she was otherwise extremely pleased with the esthetics. After the requested changes were made, intraoral images and an impression of the provisionals were obtained for the dental laboratory.

The laboratory was given the upper PVS final impression, impressions of the altered provisionals, cast of the mandibular teeth, Kois facebow record to mount on an articulator (Panadent), jaw registration record, and intraoral and preparation shade images. The laboratory fabricated lithium disilicate veneers (IPS e.max, Ivoclar Vivadent; Amherst, NY) with minimal cutback and micro layering of the porcelain on the facial and incisal aspects **(Fig 12)**.

Try-in: At the cementation appointment, the patient was anesthetized and the provisional veneers were removed using a universal scaler and crown spreader (Hu-Friedy). The prepared teeth were micro-etched with 50-µm aluminum oxide particles (Danville Materials; San Diego, CA) at 30 psi to remove remnants of provisional material and improve bond strength. The veneers were tried in with a translucent try-in paste (Choice 2, Bisco; Schaumburg, IL) that matched the shade of the permanent veneer cement (Translucent, Choice 2). The patient was extremely pleased with the marginal fit, adaptation, interproximal contacts, occlusion, and esthetics, and gave verbal and written permission to proceed with final cementation.

Etching and bonding: The restorations were cleaned with a steam cleaner and ultrasonic alcohol bath (Steaman Jr, Bar Instruments; Newbury Park, CA) and dried using nitrogen air (oil- and moisture-free). They were etched with 5% hydrofluoric acid (IPS

Figures 10a & 10b: Depth grooves prepared through the provisional transfer of the diagnostic wax-up.

Figure 11: Final tooth preparations with retraction cord packed in the gingival sulcus.

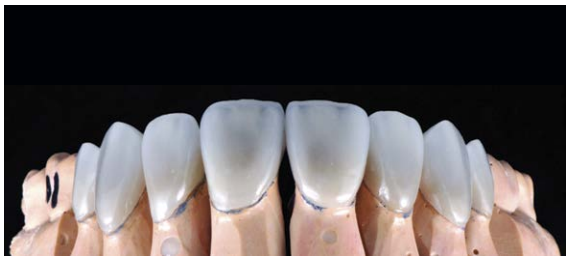


Figure 12: Layered lithium disilicate veneers.

Figure 13: Extraoral image taken immediately after cementation of veneers.

"Although gingival display was reduced subsequent to crown lengthening, lip hypermobility was still a factor in the patient's excessive gingival display."

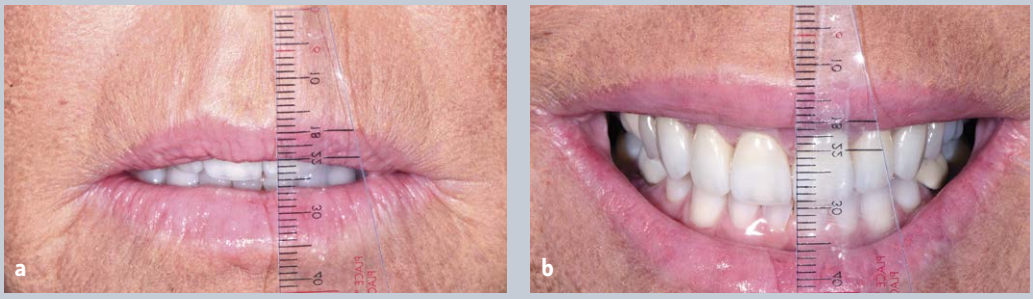
Ceramic Etching Gel) for 20 seconds according to the manufacturer's instructions. The etchant was rinsed off and the restorations were again steam-cleaned. A two-bottle silane (Bis-Silane, Bisco) was freshly mixed and applied to the intaglio surface and air-dried using heated air.

The plan was to bond the restorations in a stepwise sequential manner starting with teeth #8 and #9 and proceeding away from the midline two teeth at a time. During the cementation procedure, adjacent teeth would be covered with polytetrafluoroethylene tape to prevent cement from bonding to them and make cement cleanup easier. The teeth were cleaned with pumice and readied for bonding with a #000 gingival retraction cord (Ultrapak). They were then etched with phosphoric acid for 30 seconds and rinsed, and excess moisture was suctioned off. Nitrogen air was used after this step. Next, 2% chlorhexidine (Consepsis, Ultradent) and glutaraldehyde/2-hydroxyethyl-methacrylate (GLUMA, Kulzer; South Bend, IN) were applied to the preparations. A fifth-generation, two-bottle bonding agent (All-Bond 3, Bisco) was freshly mixed and applied to the teeth. The solvent was evaporated with nitrogen air for 15 seconds. All-Bond resin was then applied to the teeth and air-thinned. A light-curable translucent shade resin cement (Choice 2) was loaded onto the veneers, and the veneers were placed under finger pressure. A rubber-tip gingival stimulator (G.U.M, Kleen Teeth; Boston, MA) was used to clean excess cement from all aspects of the tooth before light-curing for 60 seconds. Air-blocking glycerin gel (Liquid Strip, Ivoclar Vivadent) was applied on the cement margins and cured again. Excess cement and retraction cords were removed and restoration margins and occlusion were verified **(Fig 13)**. Postoperative periapical radiographs were obtained.

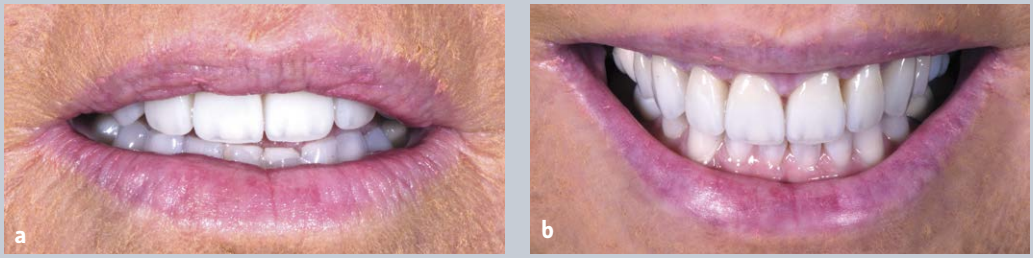
Figure 14: Estimated measurement of lip hypermobility after crown lengthening and veneer cementation. Distance moved from rest position (a) to maximal smile (b).

Figure 15: Partial-thickness nonkeratinized vestibular tissue removed.

Figure 16: Lip repositioned more coronally to reduce gingival display on smiling.



Figures 17a & 17b: Extraoral images taken 6 months after treatment, showing reduced upper lip mobility at rest (a) and maximal smile (b).



Figures 18a & 18b: Extraoral images taken 6 months after lip-repositioning surgery at rest (a) and smiling (b).

Figure 19: Intraoral retracted images of restored teeth.

Figure 20: Full-face smile view 6 months after completion of treatment.

Lip-Repositioning Surgery

After veneer cementation, the patient's gingival display when smiling was reevaluated and lip mobility was measured from rest to full smile. Although gingival display was reduced subsequent to crown lengthening, lip hypermobility was still a factor in the patient's excessive gingival display **(Figs 14a & 14b)**. Additional reduction in the gingival display could be achieved using lip-repositioning surgery,[3] Botox injections,[4] or a combination of both.[6] The patient decided to proceed with lip-repositioning surgery after being informed of the risks, benefits, and alternatives of the proposed procedure.

After anesthetizing the patient and using the LipStaT technique protocol,[5,15] partial-thickness nonkeratinized vestibular tissue was removed **(Fig 15)**, with the inferior border being the mucogingival junction. The height of the tissue removed ranged from 4 mm near the maxillary left teeth to 12 mm near the maxillary right teeth. Vertical incisions were made near teeth #3 and #14—marking the lateral extent of lip repositioning—and were sutured **(Fig 16)**. The patient was seen periodically to remove the sutures and monitor healing. Photographs were taken at 6 months. The reduction in lip mobility and gingival display was satisfactory **(Figs 17a-20)**. After treatment, maxillary and mandibular impressions and facebow and centric relation (CR) records were obtained. The patient was also provided with a maxillary full-arch acrylic occlusal splint in CR position.

Discussion

This case report describes an interdisciplinary approach for reducing excessive gingival display and improving the esthetics of a patient's smile through a combination of periodontal and restorative treatments. Excessive gingival display is a multifactorial problem with a varied etiology. Clinicians must diagnose the etiology correctly and provide treatment options to the patient while explaining the risks, complications, benefits, alternatives, and expected long-term stability of the proposed therapy or therapies. In this case, the patient was informed that although good short-term results have been reported for lip-repositioning surgery, more studies are needed to determine stability of results.[4,16-18] Silva and colleagues[17] reported a high satisfaction rate with this treatment after 2.5 years: 70% of patients considered the postoperative amount of gingival display to be "about right," and 90% said they would undergo the procedure again.

Advances in dental materials and laboratory techniques have made ceramic veneers a highly esthetic and durable treatment modality to mimic natural dentition.[19] Further, crown lengthening provides a predictable and stable long-term result. Treating complex esthetic problems requires coordination, especially with regard to the proper sequencing of treatments, among the entire dental team to achieve the desired result. In this case, crown lengthening and restoring the teeth to an acceptable morphology had to be completed before lip-repositioning surgery. The patient was also advised to wait 3 to 6 months after crown lengthening before final tooth preparation for the veneers to allow for the maturation of the soft tissues.[20-22] DSD was a valuable tool to enable the clinicians, laboratory technician, and patient to visualize the end result.

When designing a more ideal smile, clinicians should carefully consider biological and functional limitations. Another advantage of DSD is that multiple treatment options can be simulated—such as restoring only the incisors or restoring eight anterior teeth with or without gingival surgery—so the patient can make a truly informed decision.

Summary

Excessive gingival display (gummy smile) is a multifactorial problem, and its etiology should be determined with a thorough examination and workup. Digital smile design is an excellent tool for diagnosis, interdisciplinary treatment planning, and communication with the patient and team of dental care providers.

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"Treating complex esthetic problems requires coordination, especially with regard to the proper sequencing of treatments, among the entire dental team to achieve the desired result."

jCD Self-Instruction

Cosmetic Dentistry | (CE) Exercise No. jCD41 | AGD Subject Code: 780

3 Hours Credit

This Continuing Education (CE) self-instruction examination is based on the article *Interdisciplinary Treatment of a "Gummy Smile" Using Digital Smile Design* by Akshay A. Vij, BDS, ACT; Brandon Bushong, DDS, MS; and Ekta Patel, DMD. This article appears on pages 86-97.

The exam is free of charge and available to AACD members only. AACD members must log onto www.aacd.com/jcdce to take the exam. Note that only Questions 1 through 5 appear in the printed and digital versions of the *jCD*; they are for readers' information only. This exercise was developed by members of the AACD's Written Examination Committee and *jCD*'s Contributing Editors.

1. What is a "gummy smile"?

a. Excessive gingival display due to lack of teeth and hyperactive muscles.
b. Excessive gingival display due to medication use or trauma.
c. Excessive gingival display due to attrition of the dentition, either through trauma or clenching and grinding of the teeth.
d. Excessive exposure of gingival tissue during smiling.

2. Why might a gummy smile improve with age?

a. Tooth wear will shorten the teeth and make the condition less noticeable.
b. The gingival tissue naturally recedes with age and therefore less gingival tissue will show.
c. There will be a decrease in muscle tone in the upper lip's elevator muscles.
d. There will be an increase in muscle tone in the upper lip's depressor muscles.

3. Which of the following will not lead to a gummy smile?

a. Vertical maxillary growth, also known as vertical maxillary excess.
b. Maxillary dentoalveolar extrusion with anterior overeruption.
c. Lack of upper lip mobility.
d. Drug-induced gingival enlargement.

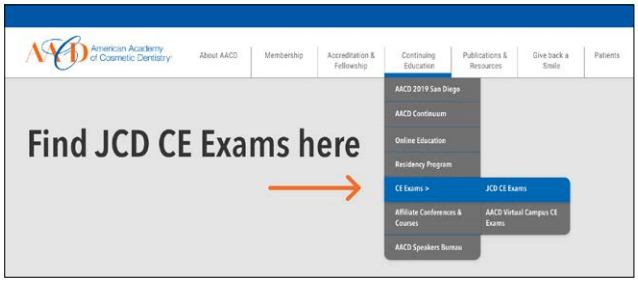
4. Which of the following makes the use of digital smile design helpful for treatment of a gummy smile?

a. This innovative technique physically alters a patient's smile to produce a more esthetic effect.
b. A stock photo is used to overlay an ideal smile on the patient's face.
c. Clinicians can use this software to alter the appearance of a patient's own dentition to be more esthetic before beginning treatment.
d. Clinicians can complete orthodontic, surgical, and restorative treatment without the need for specialists.

5. What was the likely cause of this patient's gummy smile?

a. Upper lip hypermobility and upper anterior tooth wear with compensatory overeruption.
b. Orthodontic extraction of the first premolars.
c. Periodontal disease with resulting gingival overgrowth.
d. Excessive wear of the anterior and posterior teeth.

To take the complete exam, log onto www.aacd.com/jcdce



AACD Self-Instruction Continuing Education Information

Exams will be available for 3 years from publication date for dentists, and 1 year from publication date for laboratory technicians.

Original release date: May 31, 2020. Expiration for dentists: May 31, 2023. Expiration for laboratory technicians: May 31, 2021.

To receive course credit, AACD members must answer at least 70% of the questions correctly.

Participants will receive test results immediately and can only take each exam once. A current web browser is necessary to complete the exam.

Verification of participation will be sent to AACD members via their MyAACD account. All participants are responsible for sending proof of earned CE credits to their state dental board or agency for licensure purposes.

For more information log onto www.aacd.com/jcdce.

Contact the AACD at email: info@aacd.com or phone: 800.543.9220 or 608.222.8583.

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ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry. AACD designates these activities for 1-3 credit hours to continuing education credits. Concerns or complaints about a CE provider may be directed to the provider or to ADA CERP.

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