Quick Tips

Cosmetic Treatment of the Gummy Smile

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Patients who display too much gingiva require a thorough diagnosis and treatment plan to provide a predictable esthetic treatment. These cases can be treated restoratively, periodontally, orthodontically, surgically, or with a combination of treatments. The following case uses a perio-restorative approach to produce an outstanding result.

Case Study

The patient presented with the complaint that she felt her teeth were too long for her face. In addition, she was concerned about showing too much gum when she smiled, about the space between her front teeth, and that her teeth were not white enough (Figures 1 through 3). After discussing her treatment expectations, we determined that they fell within our practice philosophy, and decided to move forward with data collection.

Data Collection and Diagnosis

Data collection included full-mouth radiographs, mounted study models in centric relation, and 35-mm color photographs. The photos of particular interest were the shots of the patient's lip in repose and whe she pronounced the letter "E," which demonstrates the amount of li mobility, amount of gingiva shown, and amount of visible tooth struc ture. Full periodontal charting was performed, including pocket depti recession, bleeding points, and mobility.

Examination revealed primary occlusal trauma on the anterior teet caused by an upper right bridge that was not in occlusion. In additio the photographs revealed a "gummy" smile that showed 3 mm of ging va when the patient pronounced the letter "E." Caries and faulty restor tions on teeth Nos. 7 and 21 were noted. Examination results and trea ment options were presented to the patient. Either orthodontics an orthognathic surgery or osseous crown lengthening could handle th gummy smile. Treatment of the faulty restorations and occlusal equil bration were to be done regardless of which treatment plan was accep ed. The patient chose perio-restorative treatment.

Treatment

Because the length of most central incisors is between 10 mm ar 11 mm, the tooth structure exposed during osseous crown lengthenir would have to compensate by removing the incisal edge. The labor tory fabricated a composite stent that would overlay the patient existing teeth. This would allow both the patient and the dentist visualize what the smile would look like with the gingiva in a raise position.

Figure 1—Patient presented with a gummy smile and diastema.

Figure 2—Close up of gummy smile. 1:2 line drawn to show ideal gum height.

Figure 3—1:1 of teeth before treatment.

Adjustments of the stent were made by either adding composite on the gingiva or using a black felt pen on the incisal edge to move the 10 mm to 11 mm central incisor in a more apical or incisal direction.

After the patient and the dentist agreed on where the gingiva and the incisal edge should be, photographs were taken of the mock up (Figure 4). An impression of the mock up was made for the laboratory. This model would be used later to provide a reduction guide as well as a matrix for the provisionals during the restorative appointment.

Osseous Crown Lengthening

The composite stent was given to the periodontist to perform the osseous crown lengthening. The periodontist used the stent during surgery not only to position the bone 3 mm apical to the cementoenamel junction, but also to provide horizontal symmetry and interproximal scalloping. After healing for 3 months, the patient was referred back to the restorative practice to begin the final restorations (Figure 5).

Preparation and Provisionals

The restorative phase was now ready to begin. The teeth were prepared with Ks Burs 0,1,2,4,6,7 (Brasseler® USA) using one of the clear stents the laboratory had made as a reduction guide. The restorations were to be a combination of porcelain veneers and ceramic crowns and bridges.

Final impressions were taken using a two-cord system (UltraPak® 00 and 0, Ultradent Products, Inc.) with much care given to the gingival tissues. Preparations were either at the free gingival margin or slightly subgingival on the facial. Care was taken not to violate the biologic width during the preparations.

The provisionals were made by placing Luxatemp® (Zenith/DMG) in a clear matrix made from the model of the mock up and then placing it in the mouth. After a set time of 90 seconds, the provisionals were removed and trimmed. They were bonded in place by spot etching the preparations and using Tetric® Flow (Ivoclar Vivadent) as luting material.

Approval of Provisionals

The patient returned to the office 2 days after the placement of the provisionals. Having lived with them for 2 days, the patient was able to provide input about changes. After the provisionals were contoured to meet with the patient's approval, photographs and impressions were taken. The lab assistant made a putty matrix to ensure the laboratory placed the incisal edges correctly.

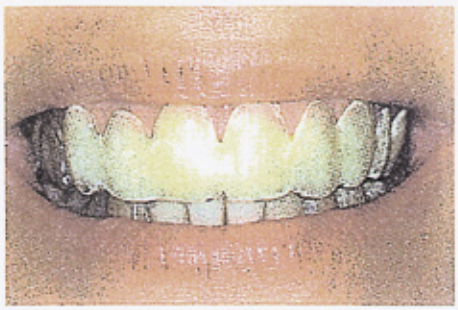

Figure 4—Mock up impression in place.

Figure 5—After osseous crown placement.

Figure 6—Final full face view.

Figure 7—Final 1:2 view.

Figure 8—Final 1:1 close up.

Delivery

The case was tried-in for patient approval. For the veneers and crowns, we used hand stacked internally layered feldspathic porcelain (Colorlogic, Dentsply® Ceramco). The bridge was also made of a ceramic material. In this case, zirconium was used because of its enhanced strength.

The ceramic restorations were bonded with Optibond™ Solo (Kerr Corporation) and Variolink® II (Ivoclar Vivadent). The putty matrix was placed to see if there were any discrepancies and the minor changes were modified (Figures 6 through 8).

Conclusion

Proper diagnosis and treatment planning can make the cosmetic treatment of the gummy smile a predictable and outstanding result. First, understand the patient's vision of what he or she desires in the smile. Second, preview what that smile would look like. Finally, work with partners like the specialist and laboratory to deliver that vision. Delivering that vision plus 1% more produces a "raving fan."

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