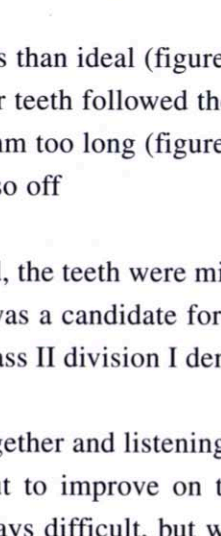




Improving on an Old Veneer Case: A CASE REPORT

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The following case report focuses on the improvement of a 12 year old veneer case. The patient presented to the author with the desire to improve on her existing veneers and to solve the problem of a veneer continually coming off.



- Upon my initial examination, I found:
- tooth number 12 was without a veneer due to inadequate occlusal reduction (figure 1)
 - anterior veneers were very bulky due to inadequate preparation of tooth structure (figure 2-3)
 - golden proportions and width to length ratio were off (84% as compared to a normal 75-80%) (figure 5)
 - arch form was less than ideal (figure 5)
 - midline was properly positioned and no canting was evident (figure 2)
 - axial inclination and zeniths were less than ideal (figure 3)
 - incisal edges of the maxillary anterior teeth followed the lip line, although they were about 1mm too long (figure 6)
 - tissue contour and symmetry were also off

To add to the challenges just mentioned, the teeth were mildly tetracycline stained and the patient was a candidate for an orthosis due to her retruded mandible (class II division I dental profile) and minor signs and symptoms.

After putting all of these challenges together and listening to the expectations of the patient, I set out to improve on this compromised case. These cases are always difficult, but with proper planning and great lab communication, the end result can put a smile on everyone's face. It is imperative to note that the patient had no interest in correcting her occlusal pathology. She was also informed that this was not going to be a perfect case but she could expect a dramatic improvement.

After a lengthy discussion on the pros and cons of restoring her to her current occlusion, the patient did agree to a TENS bite orthosis to wear during nocturnal hours (figure 8). Another consideration was the fact that we were actually going to shorten the anterior teeth to give a more ideal golden proportion and she had worn these veneers for over 12 years with no chipping or breakage noted. The only reason tooth #12 kept coming off was due to inadequate tooth reduction (figure 1).

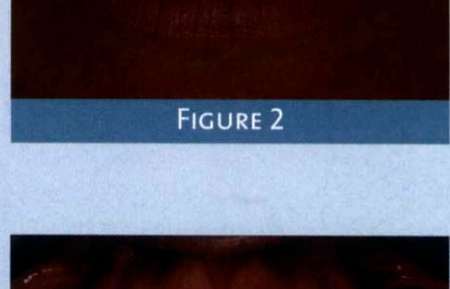


FIGURE 1

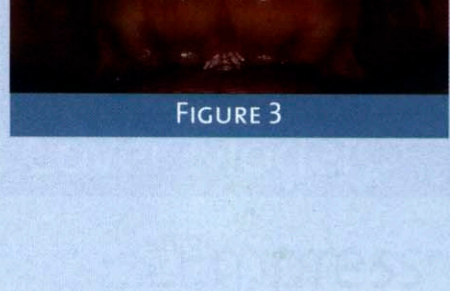


FIGURE 2

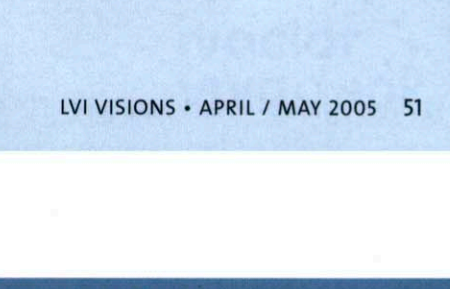


FIGURE 3

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CASE REPORT

A 37 year old female presented the desire to improve the aesthetics of her existing veneers (figures 1,2,3,4,5). The patient was in excellent health and was periodontally stable. She had no other restorative needs except for a lower molar that required a small direct resin. We discussed the musculoskeletal signs and symptoms form and palpated her muscles (some of which were sore), but her desire was to only address the aesthetics of her maxillary arch. We addressed realistic expectations about shape, color, teeth and the challenges associated with tetracycline stained teeth.

With a full mouth series of radiographs, good study models from PVS impressions, pre-operative photography, including good facial shots and retruded views, and a properly prepared patient (expectation - wise), the case was ready to be prep.

Tissue contouring with a diode laser (Diodent, Hoya ConBio) was performed with tissue symmetry, height, contour and

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zenith taken into consideration. If these factors are not taken into consideration, despite fabulous looking veneers, the case would be an aesthetic failure. We were not able to achieve perfection but a dramatic improvement noted.

Anesthetic was administered (1.8cc 2% lidocaine with 1:100,000 epinephrine x 3) and the teeth were ready to be prepped for Empress porcelain veneers or crowns where indicated. Due to the arch form, width/length ratios and the golden proportions being off, the teeth were sliced prepped through the interproximal going back to the distals of both canines.

This allows the lab the room to be able to create the ideal width/length and golden proportion ratios. One of the problems with the initial veneers was that there was not enough tooth reduction coupled with the lack of interproximal space to set the ideal golden proportions due to the fact that the teeth were not sliced prepped. This caused a bulky look to the veneers and a less than ideal arch form (figures 5). In our quest

In our quest to create conservative preps, we sometimes lose sight of the ultimate aesthetic goal.

to create conservative preps, we sometimes lose sight of the ultimate aesthetic goal. Without a wax-up and prep stent to visualize where we are prepping to, the aesthetics desired just can't be achieved. The wax up and the prep guide were used from the lab to aid in the proper reduction facially, incisally, lingually and creating the ideal arch form.

During the prep phase, the decision to mask out the underlying dentin was discussed with the lab. It was decided that the lab would be able to pick out an appropriate tint with the right amount of opacity to properly block out the color difference. This is a difficult decision to make and the author will usually try to control the color chairside by composite resin blackout if there is any question as to whether the lab will have difficulty in blocking the color discrepancy out. In this case, the lab was comfortable with controlling the color with the proper ingot (E020) selection. To aide the lab in this decision, the teeth were prepped a little more aggressively facially and the margins were placed right at the gingival crest. Due to the thickness of the tissue at the gingival crest, the necessity to "Dickerson Ditch" the cervical areas was not necessary.

One unexpected problem encountered when prepping the anterior 6 teeth was the fact that the teeth were narrower facial-lingually than anticipated. This didn't allow as smooth an incisal edge as normally desired. If a smoother incisal edge was achieved, the teeth would have been shorted significantly. Tooth # 5 had a preexisting crown, but the remaining three posterior teeth (#s.4,12,13) were conservatively prepped to allow for the conservation of as much tooth structure as possible. Interproximal contact was only broken on the mesial of tooth # 5 due to existing decay.

Once the final preps were refined and finished, a polyvinyl solixane impression (Take One, Kerr) was taken. The teeth were now ready to be temporized. A SilTec putty/wash stent was fabricated by the lab from the wax up to be used for the temporaries. The teeth were desensitized with Super Seal (Phoenix Dental), lightly air thinned and then coated with a layer of Consepis (Ultradent) to disinfect the tooth. This layer was air dried (not rinsed) and the teeth were now ready to be temporized. The SilTec stent was tried in for fit and orientation. A midline mark was made with a scaler on the stent to allow for proper orientation once the stent is filled. The temporary stent was then filled with Integrity B-1 (Dentsply Caulk) and tapped hard on the counter 3-4 times to eliminate air voids. After placing the stent in the mouth and allowing for approximately two and a half minutes to set, the stent was removed placing finger pressure on one side as the opposite side was peeled off. Because of the use of an accurate impression material (PVS), the cleanup was minimal. A half hollenback and enhance cups (Dentsply Caulk) were used to finish the temporaries. A thin diamond was used interproximally to open up the embrasures cervically and eliminate tissue impingement. The occlusion was adjusted and polished with an enhance cup. A light cured glaze was then placed on the temporaries with a multibrush and cured. Final inspection of the temporaries revealed great shape and form. The patient was seen three days later for inspection of the temporaries. She felt the length was slightly long and wanted to make that adjustment in the final restorations. That was noted by the lab and the appropriate adjustments were made on the final restorations.

Color mapping was completed and communicated to the lab along with pictures of the wax tabs for lab communication. A blend of 020, 030, 040 (Chromascope-Ivoclar Vivadent) was selected with 040 in the cervical one third, 03 in the middle third and 020 in the incisal third. Light translucency and a halo of white opaque was selected along with the appropriate stump

shades. Due to the tetracycline staining, the lab selected the E020 ingot for maximum aesthetics and opacity. Four weeks after the prep appointment, the patient returned for the placement of the final veneers. No staining or sensitivity was noted and the patient was eager to receive her final restorations temporaries (figure 9). After anesthetic was administered (1.8 cc 2% lidocaine with 1:100,000 epinephrine x 3), the temporaries were easily removed with a spoon excavator and the teeth were debrided with hydrogen peroxide, rinsed and ready for a dry try-in of the veneers, checking for marginal fit, interproximal contacts, shape, size and contour. Upon my approval, the veneers were filled with a light yellow try-in

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paste in veneers 6-8 and a translucent in veneers 9-11 (Appeal - Ivoclar). The hue, chroma, value and translucency were evaluated and the patient picked the light yellow try-in paste (6-8). She liked the way the light yellow gave the veneers warmth. The veneers were removed and rinsed with copious water spray and air dried. The veneers were then acid etched (Ultradent) with 37% phosphoric acid, rinsed with copious water spray and air dried. The internal aspect of the veneers were then coated with Kerr's Silane Primer and allowed to air dry.

At this time, a rubber dam was placed and the teeth were cleansed with Consepis, rinsed with copious water spray, and lightly dried. 37% phosphoric acid was then applied to the prepped teeth (first on the enamel for 15 seconds then 10 seconds on the dentin). The prepped teeth were moistened with Tublicid Red (Global) and the excess wetting agent was blotted off with a multi-brush. The teeth were then coated with four coats of OptiBond Solo Plus (Kerr) and lightly air thinned. Care was taken to make sure there was no pooling of the primer on the margins, facially and inter-proximally before it was light

cured for 10 seconds (Optilux 501 and Demetron LED, Kerr). The veneers were then filled with a luting resin (Appeal - light translucent) and placed on the prepped tooth and gently seated. Excess luting resin was cleaned off using a rubber tip (Butler) and disposable brush, and the veneers were ready to be spot tacked into place (3 seconds facially at the margin and 3 seconds lingually at the lingual margin). Starting with the two centrals, the veneers were firmly seated using finger pressure and the end of a disposable brush pressing incisal-cervically and facial-lingually simultaneously. This allows for proper seating of the veneers and eliminates the possibility of suck-back and potential leakage. Once the two centrals were spot tacked, the veneers were seated next starting with the right side first then the left side. The same sequence was followed when spot tacking the premolars into place. The final cure was performed (40 seconds on the facial, lingual and incisal). Final cleanup was carried out by removing any gross excess with a scaler then an enhance cup was used lightly for final marginal clean up. The occlusion was checked and the final polish was completed using porcelain polishing points and cups and porcelain polishing paste. The final inspection by everyone involved revealed a major improvement from the old veneers. (figures 13, 10, 11, 12, 14, 15, 16, 17, 18).

Reviewing a case with old veneers makes one appreciate how far we as a profession have improved in our ability to enhance aesthetics and function. From observing the basic principles of smile design, arch form, tissue symmetry, the routine use of lasers, lab communication and occlusion, we have constantly improved upon and implemented these changes to improve on the outcome of our patients' demands and desires. This constant fine tuning has allowed the dental profession to honestly and realistically meet the demands of an intelligent and sophisticated public. This has helped the profession to eliminate false expectations and to gain a trust in our patients that will propel us to a new level professional growth and satisfaction.

Dr. Timothy C. Adams is a Clinical Director at LVI. He is a graduate of Indiana University School of Dentistry where he taught clinical dentistry for 5 years. He maintained a highly successful, full-time, private practice emphasizing aesthetic-restorative dentistry for 17 years. He followed his dream of teaching and moved to Las Vegas to join the full-time LVI faculty. An enthusiastic lecturer, instructor and author of many articles on the latest aesthetic-restorative procedures, Tim is part of the LVI Faculty practice.



FIGURE 4

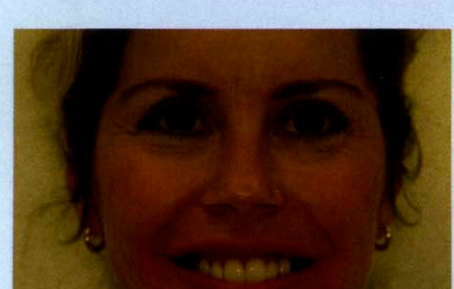


FIGURE 5

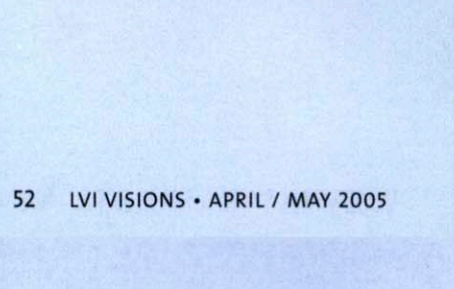


FIGURE 6

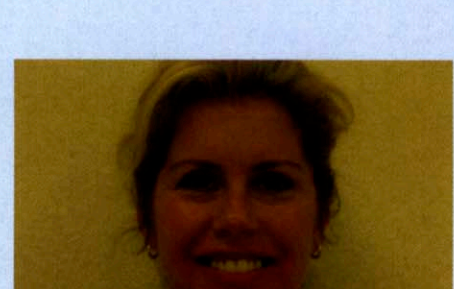


FIGURE 7

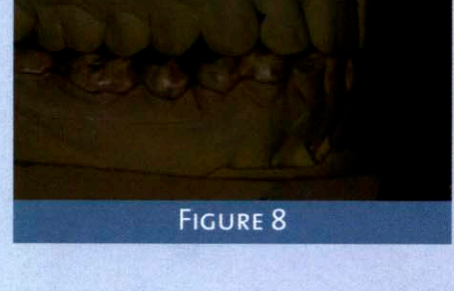


FIGURE 8

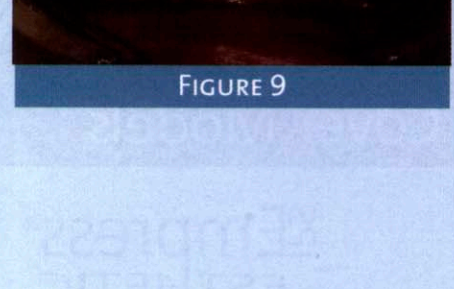


FIGURE 9



FIGURE 10

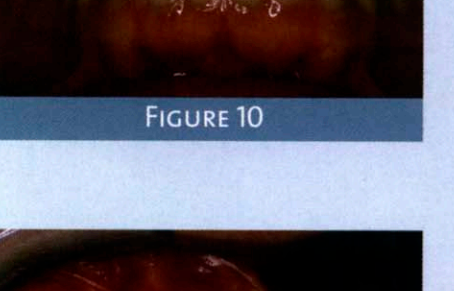


FIGURE 11



FIGURE 12

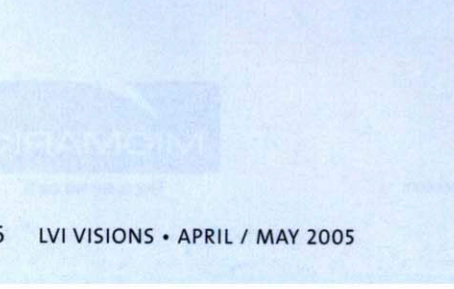


FIGURE 13

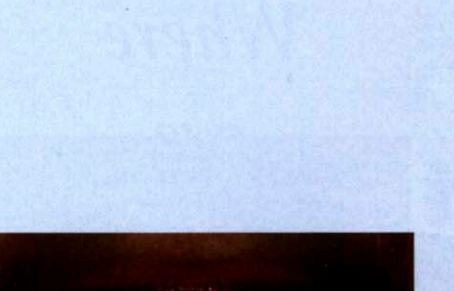


FIGURE 14

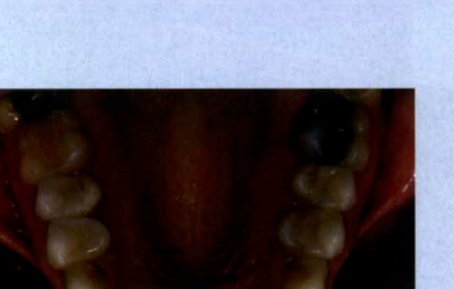


FIGURE 15

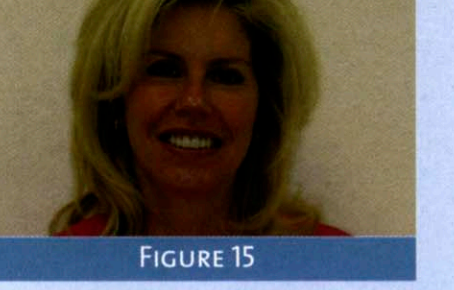


FIGURE 16

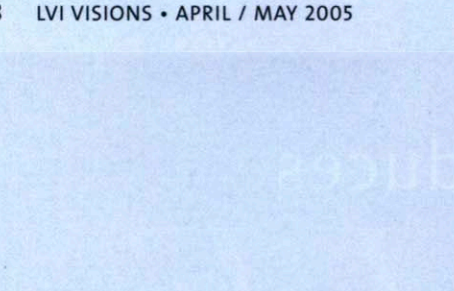


FIGURE 17

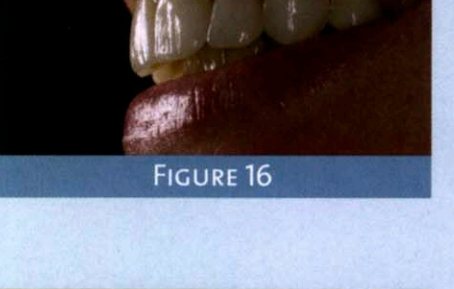


FIGURE 18

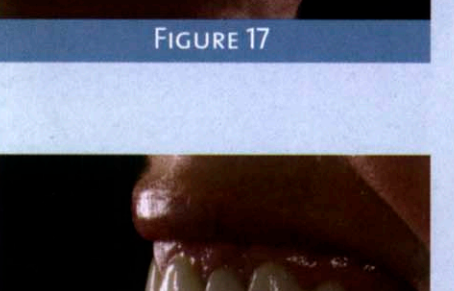


FIGURE 19



FIGURE 20

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