Makeover of a Retired Police Officer

by Luke S. Kahng, CDT

Most dentists who prescribe a hybrid bar for their oral prosthetics will order a denture teeth setting. And for a while, the teeth attached to the denture will look fine – clean and without stains. But as time goes on, as we all know, the teeth begin to look flawed and begin to need special cleaning by the clinician. The material is just not designed to withstand discoloration. And when the teeth break, the denture must be removed and repaired – a big inconvenience to the patient. These are two issues with dentures that both the clinician and patient might find to be annoying, worrisome and time-consuming.

Technicians have recently been updating their products by offering titanium bars with crown and bridge work attached. Especially considering the high cost of gold, titanium has become a viable option for dental work. With an assigned insurance code, the clinician has a proper choice to offer the patients’ insurance companies.

A titanium bar does not follow past tradition in that it is not cast. Instead it is scanned and milled with pure titanium. There is no torch work involved and there are really no problems with porcelain breakage. In fact, porcelain bonding is excellent when compared to the opposing dentition. If the technician understands the correct methods for working with this material and has good calibration of his oven at 810 degrees Celsius, the prosthesis has a good chance for excellent development. The cost is about 20 percent higher to the patient, but when considering the overall benefits, it is often worth it to spend that extra money and be worry-free. Porcelain ceramic layering is always going to look more natural than acrylic and will hold up better in the long run, too! This article will go over how to finish an All-on-6 porcelain fused-to-titanium hybrid bar case.

Case Study

In this initial view (Fig. 1), healing caps were placed over the six implants in the maxillary. The technician and clinician alike had to look at the position of the implants and compare them to the old denture, knowing that they might have to use a multi-unit abutment. Using an open-tray impression technique, the doctor was able to verify implant placement. In (Fig. 2), the upper lip can be seen since the denture is not in place. Notice the wear that has occurred to the PFM on the right-hand side. It is much lower than the other lower anterior teeth. It was determined that in order to construct a well-fitting prosthesis, the lower teeth could not be followed since the maxillary teeth would end up being too lengthy and there would be interference from the uppers. From this image, there is a lot that can be determined about this patient’s case.

In an edentulous case, we should always look at the tissue color (Fig. 3) as a factor. There are many colors that have a pink tone to them. We can decrease tooth size by creating a larger gum area within the tissue design. Our strategy should take into consideration the smile line. The shade tabs in the picture represent the various gum colors from which we can choose in order to get an accurate match.

From the old denture, a clear acrylic duplicate was fabricated (Fig. 4) as a guideline for the new appliance. From the gum line all the way to the smile zone, the shape was changed slightly, and putty was placed within the bite in order to define the incisal edge position. The size of the teeth can be increased or decreased as need be during this stage in the lab.

Custom shade tabs, created by the laboratory (Fig. 5) provided a lot of translucency and opacity from which the technician could choose the patient’s exact color match. During the CAD/CAM scanning stage, an index was created using the GC Milling Center (Fig. 6).

From the scan, a pure titanium bar was fabricated (Fig. 7). After the appliance was ground with a carbide bur, and subsequently steam cleaned, its appearance was smooth. It was then sandblasted. The degassing process can be skipped when working with titanium because the product has a lot of oxide.

After steaming, titanium bonder was next applied in a very thin layer to avoid bubbling (Fig. 8). Once the bar had been fired, titanium opaque was layered (Fig. 9) over the top. A porcelain build-up application followed after the second bake (Fig. 10) and then an application of pink porcelain (Fig. 11) with different layering techniques. After this process was finished, glaze was layered over the top of the appliance, with multiple characteristics having been applied in the embrasure, incisal edge, gingival and body one-third (Fig. 12) in order to give the teeth a more natural appearance. During a fit check on the model, it was verified that the implants lined up and would lock into place when in the patient’s mouth (Fig. 13). In a mirrored image, the screw-retained hybrid porcelain bridge was carefully inspected for any flaws or imperfections that might have escaped previous notice (Fig. 14).

The bridge was tried in the mouth (Fig. 15) with fit and comfort verified by the patient. During a smile view the midline, horizontal line, size of teeth, shape and warm color tone were all checked (Fig. 16). The patient was very pleased and left the building smiling.

Conclusion

This particular patient was not the normal retiree. She was a strong woman, having been a Chicago police officer for 30 years. In the line of duty, she was shot twice and had also survived several stabings. Her partner died at the age of 43, during a dangerous encounter. Her work life had been difficult with long hours and many tough situations. Because of this,
she had not taken the best of care of her teeth and ended up edentulous in the maxillary arch.

Now was the time to correct that situation with a hybrid bar, ceramic teeth and the aesthetics and beauty she sought in her retired life. The combination of all of the above gave her immense happiness, reflected in her final smile.

Case courtesy of: Anthony LaVacc, DMD, Private practice Naperville, Illinois.

**Author’s Bio**

Luke S. Kahng, CDT, is the owner of LSK121 Oral Prosthetics, a dental laboratory in Naperville, Illinois. In addition to being a board member for several dental publications, he has published more than 80 articles with major dental journals. He also lectures internationally, offering hands-on seminars to dental technicians and clinicians alike. The first edition of his highly successful Chairside Shade Selection Guide was launched in 2009, with international sales worldwide. Changes were incorporated into the second edition of the Chairside Shade Guide, launched in November 2010, with updates to include three components: posterior, anterior and rehabilitation design, specific for in-office custom shade matching techniques. The third edition, produced in 2012, encompasses the same concept but as a ceramic shade tab. Hand-made, the shade tabs are grouped according to natural dentition as dictated by the aging process, and sold in sets of twenty as 3.0 (Young, Cosmetic), 4.0 (Middle Years) and 5.0 (Later Years).

In 2011, he created the Kaleidoscope Wax-up™, and began selling the hardback book Smile Selection + CS³ Clinical Cases. Also included in his book publications are Anatomy from Nature and The Esthetic Guide Book.