A Whole New Smile

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Introduction

What do we do when a patient says, “Something is just not right with my smile. I don’t know what it is but I’m not happy with my appearance?” Most patients don’t know specifics about their teeth and what it is they don’t like. The clinician can sometimes help pinpoint what it is that is making the patient unhappy but if not, it might be left up to the technician during the custom shading appointment.

Such was the case with the 71 years old male patient in our case study. As the attending technician assigned to his custom shade, the author felt some responsibility to pin down exactly what was making him uncomfortable.

Based on the appearance of the old bridge in his mouth, several things were noted and discussed with the patient:
- The old bridge was too flat, especially at the gingival
- It did not offer enough lip support
- The teeth sizes were too symmetrical, which is unnatural
- The color was not vibrant or lifelike – displeasing to look at
- There was metal showing at the gingival

None of these issues is of a “clinical” nature – rather a psychological one. Using a piece of paper and pencil, the author drew pictures and demonstrated the above problems that he saw with the patient’s smile. Using his own communication tools, he also went over Smile Selections and Characterization in shading with the patient. Once these concerns were pointed out to him in detail, the patient was astounded and in complete agreement that these certainly were issues he would like to see corrected. As the CEO of a large manufacturing corporation who frequently deals with the public, he just kept repeating, “It’s got to be right!” In other words, he wanted the best work he could possibly have.

If we compare a technician’s work to that of a pharmacist, there are certain steps each must follow. It’s a formula, or a recipe, for an end product that has to have the same results each time. If a step is left out, the end result won’t be predictable. The recipe steps for this case were, in this order:

- Communicate with the patient on psychological issues and earn trust
- Wax-up the framework
- Utilize porcelain recipe color
- Define predictable contours
- Understand the patient’s occlusion

From the bench side of this patient’s case, it was up to the author to make sure he offered the best solution that he could. For that reason, he used several sure products he knew he could trust:

- Primotec’s light-cured Primopattern LC paste and gel for his wax-up so there would be no distortion in the frame design
- GC Initial IQ porcelain was layered onto the restoration 4-5 times using A2 color
- The implant parts he ordered for the bridge were from Nobel Biocare
- He did not follow a traditional shade tab color for his custom shade
Case Study

In (figure 1), the old porcelain to metal bridge is a Nobel Biocare Implant screw retained prosthesis. During a base color and translucency color check (AT-1, Light) with the LSK Chair Side Shade Selection Guide, the author noticed that the size and distal width of the bridge were displeasing, as was what he refers to as “piano teeth”, in other words, symmetrical teeth with no attempt for a natural or lifelike appearance. In addition, the metal exposure at the gingival is unattractive in appearance.

In (figure 2), the temporary 10 unit maxillary acrylic implant bridge was created for teeth numbers 5, 6, 7, 8, 9, 10, 11, 12 and 13, to be worn for approximately two months. The patient required strong lip support which is why the height of contour had to be thicker at the gingival. Surface texture was checked and chosen (TE-6, Natural) by the patient at this time, as well.

Figure 3 is a demonstration of Primopattern LC paste being used to build the pontic design, after which it is light-cured with no distortion. The gel is then used for any touch-ups (Fig. 4). Incisal guidance putty index is formed to check the height and determine facial thickness for proper porcelain build-up design – the aforementioned lip support (Fig. 5) needed for this patient’s case blueprint.

Six Nobel Biocare implants were placed in the patient’s mouth (Fig. 6) as a base for the patient’s 10 unit bridge. GC Initial™ porcelain was layered on before firing (Fig. 7). After the first firing, the second application of build-up was applied (Fig. 8). After the second firing, the bridge had this rough-textured appearance (Fig. 9).

The author was then responsible for creating a three-dimensional appearance through surface texture
(Fig. 10) which his pencil marks represent. GU Pink porcelain by GC America is next applied to the framework (Fig. 11). On top of that the author layered the Clear Image CLF material for a natural appearance (Fig. 12).

The final prosthesis rests on a mirrored surface (Fig. 13). In the mouth, post-cementation with GC GC-Cem™, note the lip support the new bridge creates for the patient (Fig. 14). A retracted, post-insertion view established the different textures and oral harmony the author created (Fig. 15) through his porcelain layering techniques. An opposite side view again checks the form of the bridge for lip support (Fig. 16).

The patient’s natural smile displays the maxillary intercusptation the author was striving for (Fig. 17).
Conclusion

The author asked if the patient had an old, smiling photo of himself as a young man so that he could compare his smile now to that of his appearance when he was younger (Fig. 18). The picture we see here is of the patient at age 14. The author noted that his two centrals, teeth numbers 8 and 9, protruded slightly in this picture. Figure 19 shows the patient at age 71, in the present time, with his brand new smile. After viewing the old photo, the author wondered if the patient missed his old smile. Did the fact that his teeth no longer protrude bother him in some way because it felt different? Was that what he was missing but just didn’t realize it?

At 71, he had a lot to teach. His spirit, his mind and his body condition were better than the author’s, about thirty years his junior! His passion for life is inspiring. Communication between the two of them led to an understanding about lifestyle and what the patient felt is important. In other words, the more we know about the patient and what he is looking for, the better able we, as technicians, are to complete the case.

About the Author

Luke S. Kahng, CDT, is the owner of LSK121 Oral Prosthetics, a dental laboratory. He has published over 35 articles in major dental publications. He is the author of the recently published Anatomy from Nature, with 50 illustrated pages of full contour wax-ups, stone models and porcelain teeth, all re-created using natural teeth as a guide. His new Esthetic Guide Book features 31 patient cases from a single anterior tooth to a full mouth reconstruction. He invented the Chair Side Shade Selection Guide featuring over 150 zirconia fabricated restorations based on patient enamel and translucency research, with patent pending.