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Beautiful outcome for cosmetic case using CAD/CAM design

Laboratories have more choices than before for these cases.

by Luke S. Kahng, CDT

INTRODUCTION

As technicians, we are dependent on the oral surgeon who places an implant because it will dictate and follow or improve the tooth abutment alignment in order to create the highest esthetics for the patient's expectation regarding

the case outcome. Our case study will outline and explain CAD/CAM case evaluation in order to create better design and prosthetic options for the best possible cosmetic solution.

Our patient is a female in her early 50s with a strong desire to improve her smile. She was

heavily involved in her case decision making process, with an interest in each step the dentist presented to her.

In the diagnostic stage, the author discussed every part of his evaluation with her—including the incisal edge position of her dentition, size

●●● A PATIENT-INVOLVED, HIGHLY ESTHETIC SOLUTION



Fig. 1 Pre-operative



Fig. 2 Custom shade appointment



Fig. 3 Freedom Scanner



Fig. 4 Occlusion view of the zirconia abutments



Fig. 5 Verification jig



Fig. 6 Occlusion view on the cast model



Fig. 7 Copings check for fit/staining color



Fig. 8 GC Initial LiSi porcelain



Fig. 9 Build-up stage



Fig. 10 Try-in with lipstick applied



Fig. 11 Try-in with lipstick applied



Fig. 12 Try-in without lipstick



Fig. 13 Try-in without lipstick



Fig. 14 Occlusion check



Fig. 15 Final view

of teeth and her temporaries—especially the color. She wanted bright, high value color without an abundance of translucency. The author made note of all her concerns and her dentition characteristics during the custom shade appointment.

CASE STUDY

In Fig. 1, we see the patient’s old acrylic provisionals before treatment began. The author was asked to look at the incisal edge and tooth color for her final restorations in order to improve on her appearance. She was very unhappy with her smile at the time of her appointment. In Fig. 2, during her custom shade appointment at the lab, the author and patient discussed and communicated regarding her color, opacity and translucency as well as what she expected when her case was finished. A Freedom Exocad system Scanner (Fig. 3) from Degree of Freedom was used for the scan and design of the patient’s restorations. It was decided to fabricate zirconia abutments for teeth Nos. 6-11 with e.max copings placed over the top.

In this occlusion view, we see the six anterior zirconia abutments that were placed in the mouth (Fig. 4), with custom titanium abutments placed in the posterior. The lab prepared a verification jig in order to ensure fit for the final restorations (Fig. 5). In an occlusion view on the cast model (Fig. 6), we see e.max copings on teeth

Nos. 6-11 and PFM crowns/bridge on Nos. 4 and 5 as well as 12-14. After internal staining to the e.max copings, they were tried on the model. Note the warmer tone to the color after the internal staining process (Fig. 7). GC Initial’s new LiSi porcelain—for anterior lithium disilicate substructures (Fig. 8) was used for the e.max copings, which created a different color when translucency and transparency were added to the porcelain application. Fig. 9 demonstrates the author’s porcelain build-up stage for the copings. The author then tried the restorations in the mouth, with lipstick applied, and took a right-side view photo (Fig. 10) and then a left-side view image (Fig. 11) and then a facial view smile without lipstick application (Fig. 12) for the reader to have a complete understanding of the appearance. Again, (Fig. 13), a right-side view is given before the occlusion check photo—shot to let the readers see the lower teeth, scheduled for restoration in the future (Fig. 14). A final smile view is last (Fig. 15).

CONCLUSION

Laboratories have more choices with this kind of case now than we used to. We may not have been interested in moving toward the digital world in terms of the work we do, but we have had to if we want to keep up with the changing world of technology. The final esthetics for this particular case’s outcome was very high and the patient

was extremely pleased with the final result.

The more information the author was able to collect about the abutments, the various options available, tissue size and contour and frame design, the better he felt about the case outcome. He would suggest that all dental technicians be open to learning about the world of digital technology and the processes involved. It is becoming more prevalent these days and technicians should gather all the information they can in order to become proficient with the wave of the future. **lab**

ABOUT THE AUTHOR

An accomplished dental technician with more than 20 years of experience, Luke S. Kahng, CDT, is the founder and owner of LSK121 Oral Prosthetics, a dental laboratory in Naperville, Ill. He has published more than 85 articles in dental journals, and his lectures have taken him across the United States and internationally. He is the creator of the Chair Side Shade Guide Seasons of Life, 3.0, 4.0, 5.0, 6.0 and 7.0 ceramic shade tabs, which were invented to facilitate effective communication regarding color between doctors, patients and technicians.