

Making Laboratory Corrections Before Completing a Case

Every individual in the lab plays a key role. Quality control, when practiced among team players, allows us to finish higher quality restorations. When any one team member in the fabrication of the restoration decides to settle for mediocracy, chances are, the case will be returned as unsatisfactory without it being seated. Each individual must be sure to decide for themselves that they will improve on the case before handing it to the next player.



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Figure 1: Teeth axis violated.

Figure 2: Contact lacking.

In **figure 1**, notice how the axis of the teeth and principles of smile design have been violated. Note as well in **figure 2** that contact between 8 and 9 and the lingual anatomy was lacking.

I made the initial cutbacks and axis adjustments to repair the case. I have also corrected contour problems. I marked five open contacts on the solid model (**Fig. 3**). I documented these errors in photos and sent them to all technicians who had previously handled the case for their review. This is vital in the learning process of a team. In the future, the waxing technician can make these adjustments prior to the pressing sequence. These efforts are rewarded forward as teammates begin making corrections along the way.

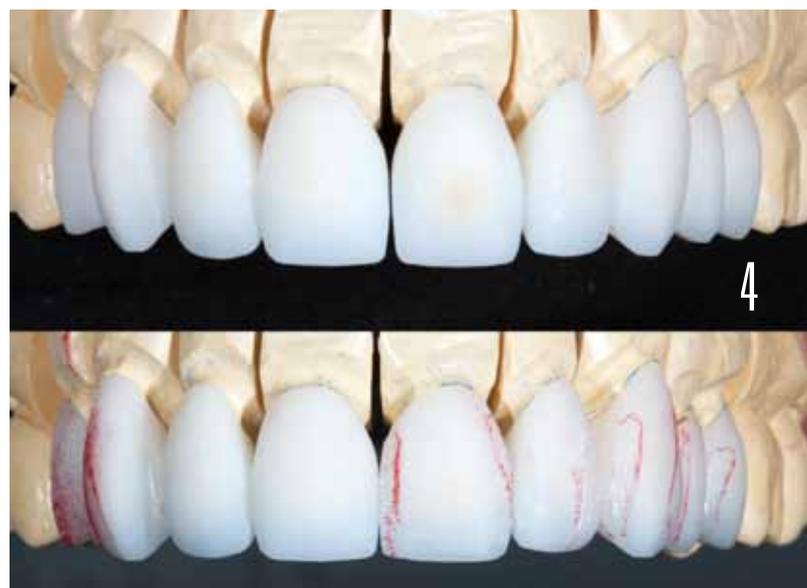
Next, I cleaned the model in preparation for contour adjustments in porcelain. I fired a corrective porcelain bake prior to staining and marked those



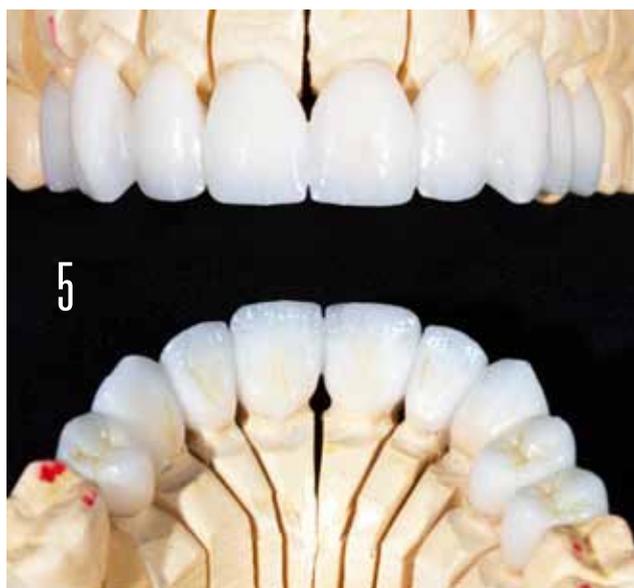
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corrections with red pencil to document how the shape and contacts should have been modeled in the wax process (Fig. 4).

This process and these steps cannot be skipped. Making these corrections in the porcelain build-up phase took two hours of production time; time that also served to educate our teammates, in order to prevent the same mistake in the future. We regard this spent time as an investment, however, rather than time lost.

Following these corrections, I applied GC Initial™ LiSi glaze liquid as a foundation. I used a violet GC Initial™ IQ Lustre Pastes NF paste mix on the incisal third of the restorations and accentuated cracks and hypo-calcification with L1 Lustre Paste. I also added L3 to separate lobes and used L7 at the cervical margin. I also applied L-B Lustre Paste on the lingual of the teeth and L-A to highlight lingual and occlusal anatomy. I utilized the custom blended violet

on the lingual to help with the absorption of light entering from the facial (Fig. 5).

Next, added was BLD-2 to form vertical lobes and then layered BLD-2 and FD-91 50/50 horizontally on 7-10 as a high value filter band to aid in the demonstration of translucency in the incisal. In units 5, 6, 11, 12 and 13, I applied the horizontal layer in the facial cervical height of the emergence profile (Fig. 6).

Figure 3: Adjustments prior to pressing.

Figure 4: Corrections marked in red.

Figure 5: Custom blended violet on lingual.

Figure 6: Horizontal layer in facial cervical height.



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Figure 7: CLF and BLD2 on incisal.

Figure 8: EOP1 on all teeth, TO on mesial.

Figure 9: Restorations smoothed and checked.

Figure 10: Restorations fired with Renfert.

I used CL-F on the incisal edge then introduced a very small amount of BLD-2 on the outermost edge of the incisal. I fired this in an IBEX oven at 770 degrees Celsius (Fig. 7).

I added EOP-1 on the body of all the teeth for enamel and then applied TO on the mesial distal and halo enamel. I then fired the teeth at 765 degrees Celsius (Fig. 8).

After firing the restorations, I smoothed them out, rechecked the contours and added surface texture (Fig. 9). I glazed the restorations and fired the restorations at 735 degrees Celsius.

After the restorations cooled I polished them with Renfert Polish, LiSi 2 (Fig. 10).

After trying them in the patient's mouth, the doctor checked the contact 8 and 9 prior to seating. We used Shimstock strips, 12 to verify (Fig. 11).



The doctor prepared the inner surface of the restorations with bonding primer (Fig. 12).

The doctor then prepared the surface of the patient's dentition (Fig. 13).

The doctor placed units 8 and 9 together, did a two-second tack on both lingual and facial, and then cleaned excess resin from the margin area (Fig. 14).

The doctor then finalized cementation of 8 and 9 with a full cure under the light (Fig. 15).

The doctor now performed the same procedures for 7 and 10, seating to completion all pairs, two at a time in the maxilla (Figs. 16-17).



Figure 11: Contacts checked.

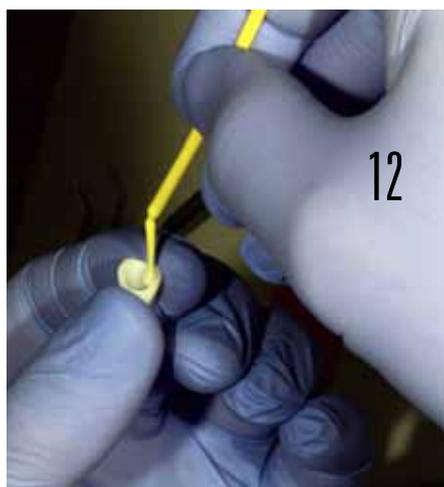


Figure 12: Inner surface prepared.

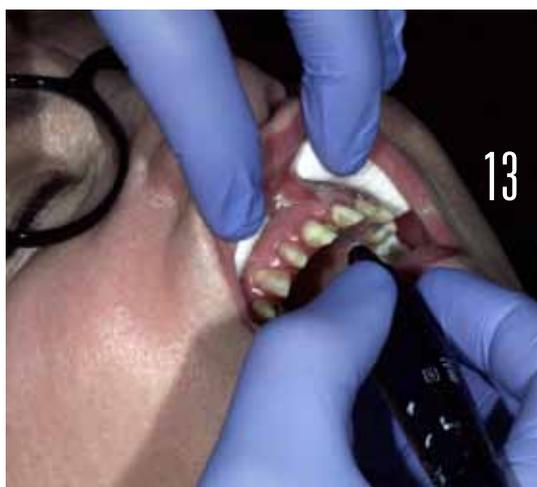


Figure 13: Outer surface prepared.

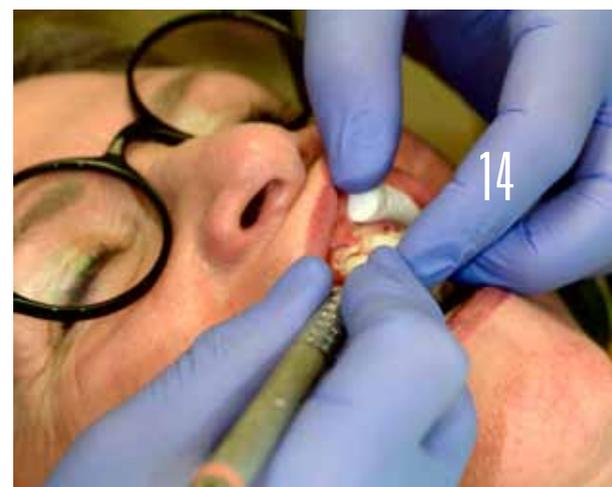


Figure 14: Units 8 and 9.

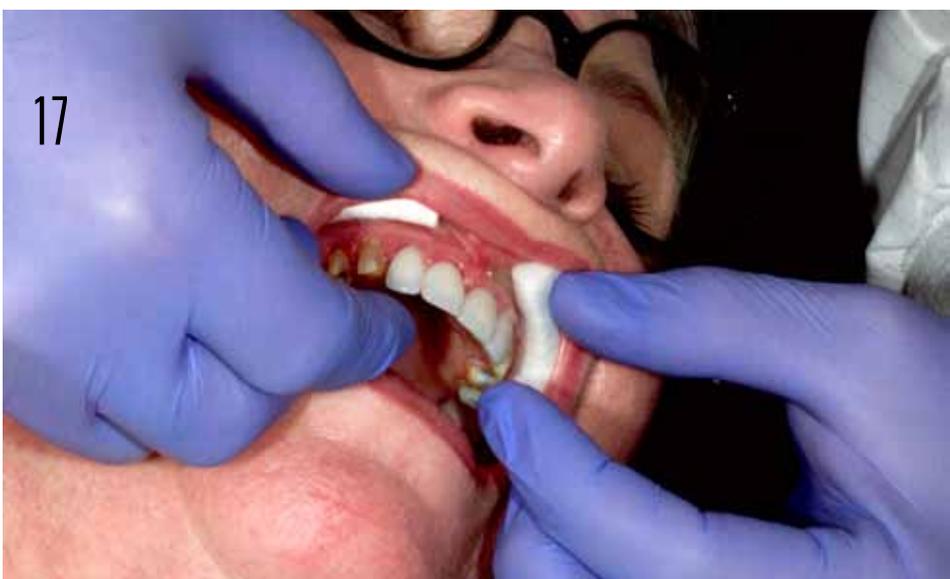


Figure 15: Finalized cementation.

Figure 16: Same procedures for 7 and 10.

Figure 17: Same procedures for 7 and 10.





Figure 18: Check of contacts and cleaning with floss.



Figure 19: Retracted and seated restorations.



Figure 20: Patient's smile post operation.

The clinician did a final check of contacts and cleaned with dental floss, searching for excess debris (Fig. 18).

Note the resulting retracted, seated restorations (Fig. 19).

Note the patient's smile, post operation, after another successful seating appointment with the doctor (Fig. 20).

As noted above, all team members must be working from the same playbook in order to produce efficient and aesthetically pleasing products. In this particular case, we turned our initial corrections into a means to define a standard procedure for all technicians. Once we determined that standard via corrections to earlier work, we were able to continue with the restorations and produce an aesthetically pleasing product for the client. Investing time in your team and creating documentation with follow-up training will allow future success with fewer procedural compromises. We can then focus our time on great work and more subtle improvements that we wouldn't normally have time to work with when deadlines are important to maintain. **JDT**

About the Author

Dane owns Smiles Boutique in Boise Idaho. He is a Member In Process with the AACD. He lectures and writes articles internationally. He also is a Black Belt Professor of Brazilian Jiu Jitsu.



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