HOW TO MATCH DETAILED SHAPE AND COLOR

By

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Introduction

It is always interesting to plan and finish a dentist’s case. They are the most discerning of patients, of course, but are also extremely appreciative of our efforts, because they know the amount of work that goes into the final result.

This particular case involved a dentist in his mid-40’s who had an unrestored implant on tooth #8. The surgeon placed a Branemark Hextop implant in the year 2000 and the patient had since been wearing a flipper. Personal circumstances had, until this time, prevented him from concluding the treatment plan. In addition to the implant, central #8 was endodontically treated. Tooth #9 had a large resin with recurrent decay which the patient and attending clinician determined would be crowned. Overall, the patient was not happy with the unesthetic view and interested in finalizing the work he had begun a decade earlier (fig. 1).

The clinician recommended a milled zirconia abutment for tooth #8 and zirconia (GC Aadva Milling Center) crowns on both centrals. With a zirconia abutment in place the adjacent teeth color could be easily matched. Treatment plan was accepted by the patient and the work was begun.

Case Study

In the operatory, the clinician proceeded with shoulder preparation for tooth number 9 and final impressions using Impressive putty and light body materials. Anesthetization included .25 carps of 4% septocaine 1:100,000 epi. The flipper was maintained for tooth #8 and a Luxatemp provisional prepared for #9. The implant was well-placed, as the diagnostic radiograph (fig. 2) image reveals. The post preparation image, before placement of the temporary, indicated for the technician the after-prep color and the exact placement of the zirconia abutment in the mouth. It was then noted, after pouring up the model, that teeth numbers 7 and 10 were of a different height incisally (fig. 4).

For this case, the author determined that he would use GC Initial ZR LF porcelain (fig. 5), specific for all ceramic crowns. In (fig. 6) the author layered the second build-up with enamel in a trans-neutral color. Next, after baking, and before glazing (fig. 7) is the bisque bake stage appearance. In this stage,
the author was able to try the crowns in the patient’s mouth in order to judge the width and size of the teeth (fig. 8). It was determined that the diastema needed to be closed and that the teeth were too boxy in appearance. Touching up the angulation between the teeth would close the mesial-distal line. This photo was taken post bone grafting and does not have the esthetically pleasing appearance the tissue area would have after healing.

After re-shaping the teeth (fig. 9), the author determined that the color tone was too bright. The restorations needed to be touched up once more. With GC Initial Lustre Paste, (fig. 10) the author was able to utilize A-D shade colors in order to blend the color and achieve natural harmony. He mixed together a light and dark grey ceramic paste in order to touch up the incisal area (fig. 11), keeping in mind the shape and appearance of natural teeth (fig. 12). These natural, extracted teeth serve as a model for him as he constructs his restorations. After mixing together the grey ceramic pastes and trying in the crowns (fig. 13), he next put together an orange brown coloration (fig. 14) followed by white to be mixed in with the grey (fig. 15). All of these various combinations of colors served to provide a match with the patient’s natural dentition.

The final restorations were tried in the patient’s mouth (fig. 16) upon which he gave approval for cementation. Using 3M ESPE™ Unicem cement, the clinician permanently cemented the crown for the patient. (Fig. 17) is a post-cementation view, full smile, with the left side angle (fig. 18) and fully retracted view following (fig. 19). A final smile image was captured before the patient completed his final visit to the clinician’s office to conclude this case (fig. 20).

**Conclusion**

This case was somewhat challenging to the author because of the combination: an implant restoration for tooth #8, and a crown developed for tooth #9. For these restorations to have a natural appearance he had to reconstruct tooth morphology. In listening to the patient’s concerns he was able to determine what was most important to him: esthetics and covering the loss of papilla in his gum line. He asked that the “black triangle effect” be minimized.

The author was aware of a helpful element for making this case a success: The laterals had less
transparency than the other teeth which meant that the color was easier to match overall. While noticing that later #10 is longer than #7, he concentrated on following the horizontal line of #10 in order to create a better appearance for the incisal edge position. This drew the focus away from #7 and attention to the overall appearance of the central/lateral positioning.
Fig. 1) Pre-operative view

Fig. 2) Diagnostic radiograph indicated a well-placed implant on tooth #8

Fig. 3) The clinician recommended a milled zirconia abutment for tooth #8 and Zirconia crowns on both centrals

Fig. 4) After pouring up the models, it was determined that the incisal height of numbers 7 and 10 were different

Fig. 5) GC Initial ZR LF porcelain

Fig. 6) Second build-up
Fig. 7) Bisque bake stage

Fig. 8) Try-in for width and size of teeth

Fig. 9) After re-shaping, color tone was too bright

Fig. 10) GC Initial Lustre Pastes

Fig. 11) Light and dark grey ceramic GC Lustre Paste mixture

Fig. 12) Natural, extracted teeth
Fig. 13) Try-in stage

Fig. 14) Brown/orange Lustre Paste mixture

Fig. 15) White Lustre Paste to follow

Fig. 16) Final restorations tried in the mouth

Fig. 17) Post-cementation

Fig. 18) Left angle view
Fig. 19) Fully retracted

Fig. 20) Final smile view