

INTRAORAL DIGITAL IMPRESSIONS AND A LABORATORY- FABRICATED RESTORATION

CASE PRESENTATION | XX

A healthy 45-year-old male presented with a temporary restoration placed in tooth No. 20 after he was previously seen 1 week before on an emergency basis to evaluate a cusp fracture. The patient was anesthetized and the temporary restoration was removed. Caries was fully excavated, and a core build-up material (Clearfil DC Core Plus, Kuraray America) was placed to enhance retentive form of the preparation. Retraction was achieved using impregnated cord (Ultrapak, Ultradent).

The cord was removed and the preparation was lightly powdered using an impression contrast spray. Final impressions were made using a digital scanner (True Definition, 3M ESPE), showing instantaneous visual capture of margins, grooves, and adjacent teeth. A provisional restoration was fabricated with a bis-acryl temporary material (Protemp, 3M ESPE) and luted (RelyX Temporary Cement, 3M ESPE).

Instructions were entered into the digital impression system and crown details were chosen. The digital file was instantaneously sent to the dental laboratory for fabrication of the indirect restoration.

One week after the impression was made, the patient returned to have the final crown placed. The provisional crown was removed and any residual temporary cement was removed from the preparation. The final PFM crown was tried in the mouth; minimal adjustments were necessary. The crown was luted using a resin-modified glass ionomer cement (RelyX Luting Plus, 3M ESPE).



Dr. Michael Scherer is a full-time private practice prosthodontist in Sonora, CA, and an Assistant Clinical Professor at Loma Linda University. He has published articles related to implant dentistry and digital technology with a special emphasis on implant overdentures. Dr. Scherer's involvement in digital implant dentistry has led him to develop and utilize new technology with CAD/CAM surgical systems and outside-the-box radiographic imaging concepts.



Figure 1—A patient presents with a temporary restoration in tooth No. 20.

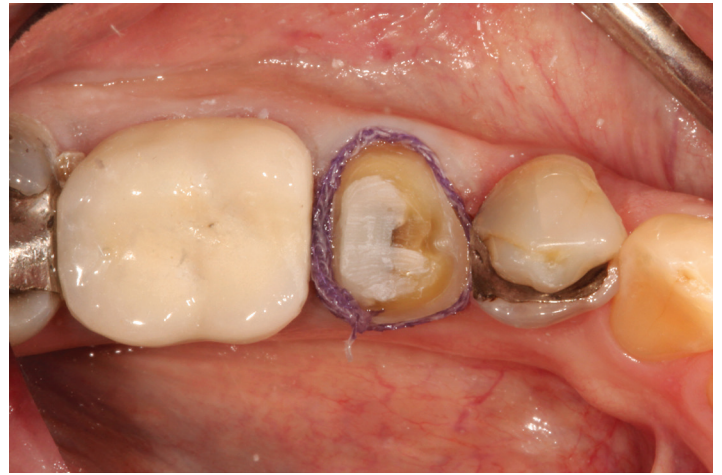


Figure 2—The tooth was prepared, caries removed, and a foundational restoration was placed (Clearfil DC Core Plus, Kuraray America). Retraction cord (Ultrapak, Ultradent) was placed.



Figure 3—Contrast spray powder was applied and digital impressions were made using an intraoral scanner (True Definition, 3M ESPE).

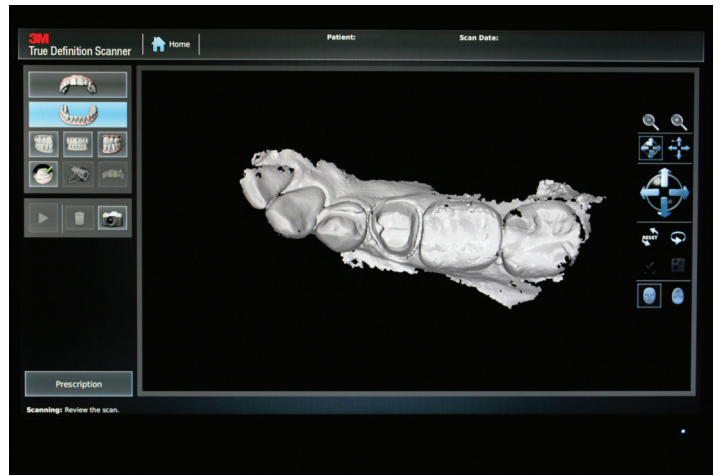


Figure 4—Digital impression showing instantaneous feedback of acceptable margin capture and preparation details.



Figure 5—A provisional restoration (Protemp, 3M ESPE) was fabricated and cemented using a temporary luting agent (RelyX Temporary Cement, 3M ESPE).



Figure 6—The digital impression was sent to the laboratory and a PFM crown was fabricated on 3D printed models.



Figure 7—The 3D printed models assist the laboratory in verifying margin adaptation, occlusion, and esthetics.



Figure 8—The provisional restoration was removed and residual cement removed from the preparation.



Figure 9—The crown fit was evaluated and very minimal adjustment was needed. The crown was luted using a resin-modified glass ionomer cement (RelyX Luting Plus, 3M ESPE).

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ABOUT THE LAB

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