BellaTek Encode System

The digital era for implant and tooth-supported prosthetics based on computer-aided design and computer aided manufacturing (CAD/CAM) has progressed in the past two decades, mostly due to market-driven development of various generations of visible light impressions. Integration and application of this technology within the realm of implant dentistry has been limited with a greater emphasis toward conventional crown and bridge applications.

We recently completed a clinical evaluation combining the Encode Impression System and the Cadent iTero intraoral scanning technology to understand the technical feasibility of combining these two CAD/CAM technologies.  24 patients (24 cases) were included in the U.S. and we completed 16 of those cases in our office. A protocol was established to allow me to digitally impress special codes embedded on the occlusal surface of the Encode® Healing Abutment.  These codes provide the essential information (implant depth, hex-orientation, platform diameter and Certain® Internal Connection interface) for placement of the implant analog in the master cast robotically (Robocast) and to design and mill the final abutment (CAD/CAM). The digital file is transferred to Cadent for fabrication of a polyurethane model from which the crown is fabricated.  After milling of the abutment, the digital file is then transferred to Cadent and the final model is then shipped to the partnering lab for fabrication of the crown. The technology has completed 510K approval through the FDA and will be available commercially by fall of this year.

A 30 member team has been selected throughout the U.S., Europe, and Australia to utilize this technology prior to commercial release. We are one of two Periodontists selected and feel very fortunate to be part of this groundbreaking technology. The 30 member team is made up of Periodontists, Prosthodontists, Oral Surgeons and General Dentists.

We are making this technology available to our referrals and have had very positive feedback on marginal fit. For those clinicians who would like to utilize this technology we would handle the referral exactly as we do now: the Pt. would be scheduled for a comprehensive implant evaluation and treatment planned accordingly. We ask that your office select the shade and forward that information to the lab fabricating the restoration. The implant(s) will then be placed and allowed to heal for 4-6 months dependent upon jaw placement.

Once the integration healing is completed all patients will then be digitally impressed utilizing the Cadent iTero® digital impression system. A digital scan of the Encode healing abutment using the iTero® intraoral scanner will be taken to include the opposing arch and a 90 degree bite registration. All scanning data will then be digitally sent to Cadent to be processed and converted to STL files in preparation for final abutment fabrication. As an STL file the data will be forwarded to Biomet 3i to begin the design and fabrication process. Engineers at Biomet 3I will then place the STL file into specifically designed software to design the virtual abutment in preparation for the CAD/CAM milling process. *For further modification and approval a .jpg file can be sent directly to you or your lab for approval of design (i.e. margin location and emergence profile) prior to final manufacturing.* The new STL file with the patient specific abutment in place and Encode® healing abutment removed is sent back to Cadent for fabrication of a polyurethane master cast (working model) for completion of the final restoration. Once your lab receives the case the crown is then fabricated on the iTero® model and delivered to your office with model, abutment, and abutment specific screw in preparation for the final seating.