Treatment Planning for Dental Implants

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The role as a dentist to replace a missing tooth or multiple teeth involves an immense collaboration of information and skills. It is a large responsibility. As with any goal, a plan needs to be in place for successful execution. With respect to effectively replacing millions of years of evolution of human dentition, implant dentists need to take into consideration many disciplines of dentistry. To replace a tooth or teeth with dental implants in a dental practice, a dentist must understand the many surgical, prosthetic, and practice management areas of dentistry. These topics include occlusion, hard tissue considerations, implant positions, anatomical considerations, phonetics, appointment logistics for the patient, financial considerations for the patient, and more. This is what treatment planning is all about.

This month's *Implants Today* article, by *Dentistry Today*'s implant advisory board member Dr. Craig Misch, is an excellent example of how treatment planning concepts come into play in the aesthetic zone. The aesthetic zone is one of the most demanding areas of the mouth to plan, place, and restore dental implants. All treatment performed in the anterior region is front and center stage with regards to aesthetics, soft-tissue contour, and function. Dr. Misch shows how— through a comprehensive assessment of a patient's lip-line, bone level, soft-tissue condition, and more—a treatment plan based on a prosthetically driven approach can be made.

A large component of treatment planning, as Dr. Misch mentions, is incorporating a CBCT scan. A CBCT scan is imperative to ideally treatment plan for tooth replacement with implants. A CBCT plan offers information on anatomy, implant location, bone density, pathological conditions, and much more. Additionally, a CBCT scan offers ideal medical legal protection that is unparalleled by any other treatment planning modality. Combining a CBCT scan with a radiographic presurgical prosthetic template allows for a true presurgical plan based on the prosthetic end result.

A CBCT scan becomes even more important when a full arch of dental implants is being planned. The complexities of full-arch tooth replacement with implants are numerous, and a CBCT scan can help navigate these complexities and solidify a final plan. A prosthetically approved radiopaque denture used for a CBCT scan can offer invaluable information that relates the implant position to the final prosthesis. This prosthetic surgical relationship can also optionally be translated to a surgical guide that helps facilitate implant positions based on the planned prosthetic goal. A surgical guide can be used to facilitate implant placement with the guide directly through the guide sleeves, or the guide can be removed after initial osteotomy preparations and the implants can be placed freehand. I often use a guide for a full arch of implant treatment, but only use the guide for the initial implant osteotomy positions. I then remove the guide and place the implants freehand using the preplanned initial osteotomy sites. The initial osteotomy sites can then offer a direct guidance for either further osteotomy preparation and/or implant placement. *Dentistry Today*'s implant advisory board member Dr. Scott Ganz has termed this *Template Assisted Surgery*. Using this Template Assisted Surgery technique, I then have better tactile sensation to gauge the bone density and proceed accordingly. When a clinician spends the time to plan an implant case online, for instance, with a radiologist to create a surgical guide, this is the start of ideal prosthetically based surgical treatment planning. Once a treatment plan is created through this collaboration with a radiologist, options exist for the surgical execution of the plan. Also through this

presurgical treatment planning, the clinician has the opportunity to commit to the final prosthetic end result. This could range from an overdenture to a screw-retained or cement-retained fixed implant bridge.

Lastly, an ideal treatment plan takes into consideration a patient's needs and desires, and clinically fits the situation. To do this, a clinician must listen carefully to the patient, then educate the patient on the available options. At times, this sequence toward ideal treatment may involve staging phases of treatment because of financial considerations of the patient. An example of this is placing dental implants to support an overdenture, then at some point in the future converting that overdenture to a screw-retained fixed prosthesis. Treatment planning for dental implants is truly multidisciplinary, with one of the biggest challenges being how to provisionalize a patient during treatment. Only through understanding the patient's lifestyle, needs, and desires, can the correct provisionalization sequence be chosen. The myriad of choices for treatment planning for dental implants can be made manageable for a clinician, when a defined treatment goal is determined, the patient is listened to, and a CBCT scan is used to implement that plan, either guided or nonguided.

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