3D imaging: Increasing implant accuracy

By i-CAT Staff

Implants are making news on a global scale. According to The Wall Street Journal’s Market Watch, the implant market “is mainly driven by the rising edentulous population, increasing adoption of advanced dentistry in the developed countries, increase in disposable incomes and increasing awareness of dental care.”

And while this procedure is growing globally, the report notes, “The North American market is expected to grow at a higher pace than Europe mainly due to lower penetration and the high adoption rate of advanced dentistry.”

While types of materials and implants are evolving in the market, imaging is key to knowing the precise details of the patient’s dentition that can affect a favorable outcome. Practitioners can avoid potential surgical complications by checking for root entanglement prior to extractions with automatic nerve location. Practitioners can establish precise angles to fit the implant sites, and confidently develop patient anatomy and the desired outcome.

In combination with TxSTUDIO™ software, clinicians can combine their 3-D images with intraoral scans for a more complete representation of the anatomy and hard and soft tissues to increase accuracy of implant placement and restoration design. With all of the implant planning and implementation tools available with i-CAT, an important aspect of the i-CAT system is the emphasis on control over radiation dose.

The i-CAT® FLX™ has gained a wide reputation for image quality, smooth workflow and low radiation dose.

To streamline the implant process, an extensive library of implant templates affords best possible selection of suitable implant type, size, location and angulations prior to surgery.

To facilitate communications with the lab, as well as developing surgical treatment plans, clinicians can choose to import STL files from either digital models or their intraoral scanner and easily register those with their i-CAT 3-D scan in TxSTUDIO software.

This communication with the lab can create the final restorations based on the practitioner’s exact design. Also, i-CAT scan files are universally compatible with all leading surgical guide providers to expand implant planning capabilities.

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By MISS Staff

The MIS MCENTER offers custom solutions for both the surgical and restorative aspects of implant dentistry. The MGUIDE and CAD/CAM 360 can take you and the patient from edentulous to temporaries and abutments in a few easy steps.

Beginning with the planning and surgical phase, the MCENTER makes the process simple and affordable. First, the doctor submits digital (DICOM) data and models or impressions of the patient’s mouth. Easy-to-follow instructions to determine the type of information to submit can be found on the MCENTER website www.mcenterusa.com.

MCENTER professionals upload the data into the MGUIDE software, in which the DICOM data and the scanned models (STL files) overlap. Virtual implants are placed in the software in accordance with the patient’s anatomy and the desired outcome. A screen-sharing appointment is then scheduled with the MCENTER professional and the doctor to review, plan and approve the case.

During that screen-sharing appointment, each implant is evaluated in real time and the clinician can have the position of the implant altered. Once the surgical plan is approved by the clinician, a customized surgical stent is designed and manufactured using the latest 3D printing technology. The surgical stent is packaged with the appropriate implants and usually shipped two days after final approval.

The MGUIDE software is not purchased by the doctor. That immediately brings down the cost of guided surgery. With the MGUIDE system, you pay for each stent on a case-by-case basis (or a multi-case package can be purchased).

Surgeons notice the differences in the MGUIDE surgical stent right away, according to MIS customers. The stent is designed so it clips on the undercut of existing teeth to secure it in the proper position. For edentulous cases, the stent rests on the soft tissue and is contoured specifically for each individual case. The stent is then safely secured using either fixation pins or template anchoring screws.

The MCENTER’s surgical stent has a clear and open architecture that offers the ability to access and easily irrigate the osteotomy site without the need for awkward drill guide keys that are used in traditional guided surgery systems.

MCENTER provides a full range of zirconia restorative solutions for dentists and dental labs, as well as custom-milled zirconia abutments, full contour crowns, copings and bridges.

Temporary restorations can be created to be delivered with the surgical stent at the doctor’s request. With state-of-the-art CAD/CAM milling machines and high- quality raw materials, the MCENTER is able to deliver meticulously designed and crafted components to the restorative doctor.

Whether you utilize the MCENTER for your entire case, or just for a portion of it, we believe you will enjoy being part of the team.