**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 tracing.

Oral and maxillofacial surgeon Dr. Steven Guttenberg noted that CBCT offers him “the data to evaluate potential implant sites, and confidently develop a treatment plan. I can place implants exactly, avoiding anatomical structures, such as the sinuses and nerves, and I can establish precise angles to fit the implant properly in the available bone.”

CBCT, with its high resolution, can establish precise angles to fit the implant properly in the available bone. With CBCT, patients’ confidence grows and so does my confidence to treat them properly and safely.

In combination with Tx Studio® 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 offers step-by-step guidance for selecting the appropriate scan for each patient at the lowest acceptable radiation dose, as well as full detail 3-D imaging at a dose comparable to a 2-D panoramic X-ray with QuickScan+.

Dr. Randolph Rensink said that the low-radiation factor is a valuable aspect of the i-CAT system. He notes: “The i-CAT scanners produce unparalleled, images, which are so crucial in the treatment planning for dental implants. Additionally, the flexibility of these units allows the clinician to collimate and select various fields-of-view, thus drastically reducing the radiation exposure to the patient.”

Having experienced the inherent differences in 2D- and 3D-planning, Dr. John Russo said, “3-D imaging provides safety for my patients and confidence that I am formulating a good diagnosis before developing a surgical treatment plan.”

In the Internet age, where more patients can learn about implants as a viable treatment option, 3-D imaging can help to guide clinicians from plan to scan to treat, increasing surgical predictability and facilitating precise implant placement — with less pain and lower doses. Cone beam 3-D imaging continues to revolutionize 3-D dental and maxillofacial radiography.

Learn more about i-CAT systems at the AAP meeting in booth No. 114 and CDA in San Francisco in booth No. 2016.

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**How to utilize the MCENTER by MIS**

By MIS 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 temporary and abutment 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 3-D 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 undersurface 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.