

Air Techniques' ScanX Swift™ Digital Radiography System Eases Implant Planning and Placement

For implant planning and placement, digital radiography has been an enormous boon, says Gregori M. Kurtzman, DDS. First, notes the Silver Spring, Maryland-based private practitioner, the software designed for use with these digital images has allowed more accurate measurements when planning implant placement compared to film radiography in relation to the distance to anatomical features such as the inferior alveolar nerve and maxillary sinus, plus distances between natural teeth where an implant may be placed.

"This allows practitioners to measure point to point to determine what spacing is present more accurately than measuring a radiographic film with a ruler," he says.

Additionally, advantages inherent in digital imaging include speedy availability of the images and the ability to magnify or enhance them to better analyze the data. Given the frequent need for radiographs to check depth of the osteotomy, angulation, and relation to adjacent teeth/implants, or anatomical structures during the procedure, he says, the faster availability of digital images compared to film is especially important, as is the ability to use the software to take accurate measurements. Further benefits of digital radiography, explains the former Assistant Clinical Professor at the University of Maryland, include lower radiation dosage and better communication facilitated by digital transmission of the images.

"The referring doctor can send radiographs via email for evaluation or treatment with specialists and other practitioners. This also allows the surgeon to send final imaging to the referring doctor by email, shortening the timeframe in the communications loop," he notes.

Currently available options for digital image capture, Kurtzman says, include hard sensors and phosphor sensor plates (PSPs). "Hard sensors provide instant images once the sensor is exposed, but they are thick and inflexible and can be challenging when shallow palates or tori are encountered in the patient," he suggests. "In contrast, the thin, flexible PSPs can be utilized more readily when these anatomical features are present, and the PSP sensor can capture more image area than a hard sensor." PSP images are processed in units such as the ScanX Swift™ from Air Techniques, Inc.,

which transfers the data to the software being used in the practice.

ScanX Swift, he maintains, enables doctors to quickly acquire essential data in a more comfortable fashion for patients. After insertion into the ScanX Swift unit, Kurtzman explains, the PSP image is processed in 9 seconds, a fraction of the time required for film processing. And because the ultra-compact unit has a small footprint, it can be kept in the operatory where implant surgery is being performed, allowing the surgical assistant to quickly process the PSP without leaving the room.

Kurtzman expects film radiographs to be totally replaced by digital radiographs in the near future as practitioners become more cognizant of their benefits. But he also expects imaging changes with relation to implant planning that are similar to those utilized in CBCT imaging software. "Practitioners will be able to place a virtual implant into the space on the digital periapical to determine which implant will fit the anatomical limitations of the site in regards to length and diameter. This will not have the same accuracy as what is being performed with CBCT but will allow for preliminary planning."

As for improvements in PSP technology, he observes, "PSP sensors will be available with a 1-mm x 1-mm grid in the sensor so that practitioners can get basic measurements, allowing for any distortion that may occur when the PSP is bent to fit the patient's anatomy. This will allow shortening of the treatment time during implant surgical placement and endodontic length verification."

Kurtzman predicts that as CBCT units become more cost-effective, they will likely replace panoramic radiography in US dental offices, that digital impressioning will become common for both implants and natural teeth, and that laboratory work will be performed largely using CAD/CAM technology. "These advances will allow implant planning to be performed, a surgical stent fabricated, and a screw-retained provisional provided—all ready at the time of surgical implant placement—thus, shortening chairtime and providing more accurate implant placement and provisionals."

AIR TECHNIQUES, INC.

1295 Walt Whitman Rd
Melville, New York 11747
800-AIR TECH
dentalaegis.com/go/cced721

