

BEYOND

Adopting **3-D technology** can expand



Fig. 1

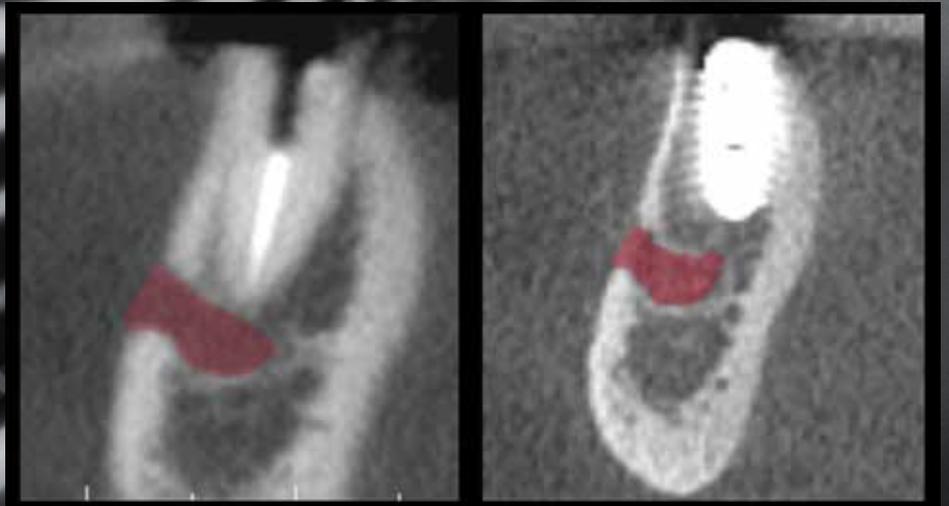


Fig. 2

IMPLANTS

treatment options and boost your reputation

For clinicians who place implants, 3-D imaging can be an asset that helps improve the way they diagnose and treat implant patients, as well as those with other dental conditions.

During my residency, 3-D imaging was an important part of learning to evaluate and plan every aspect of implant surgery. So when I purchased my practice a year and a half ago, I knew that to build an implant practice, I needed to add CBCT technology; the extra information it provides helps build my reputation and my practice's potential. (I had experience with several brands, but ultimately opted to purchase an i-CAT system.)

With 3-D imaging, the process for preparing a patient for an implant is simplified but more precise. After confirming candidacy for the procedure, I take a 3-D scan and use it as a visual aid while I discuss anatomy, jaw, soft tissue and possible implant location. If the patient is on board with the treatment, then the clinical process begins.

Again, I review the scan and decide on the size of the implant, based on the anatomical dimensions. I choose the diameter and the length of the implant and, using 3-D planning software, virtually "place" it in the proper position for optimal occlusal forces. I then export this information and place an order for a surgical guide; within a few days, it's ready for approval.

It takes a week or less from finalizing

the implant plan to receiving the surgical guide—a quick turnaround time. With this planning capability (Fig. 1), my implant cases have been well-placed, and postop outcomes have been good.

Informed views lead to informed decisions

Having 3-D imaging not only provides me with accurate and viable diagnostic information, but I've also noted that allowing patients to see their condition motivates them to make the right choices. Patients are more apt to schedule treatment when they see the condition of their teeth. This has also led to word-of-mouth referrals and an improved reputation as a technology practice.

Information gained from the CBCT scan can help me avoid possible complications. For example, a patient fractured tooth #29 at the gingival margin. I explained that the tooth was nonrestorable, and she asked about an implant.

On the standard periapical X-ray, the anatomy where the implant was to be placed looked a bit suspicious for proximity to the nerve. I couldn't really determine that information from the standard 2-D scan, so I captured a 3-D image, which showed that the mental foramen was right at the apex of the tooth (Fig. 2).

The original plan was to extract the tooth and place the implant on the same day. If I had placed the implant where the tooth socket was, I would have placed the

by Patrick L. McGee, DDS



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He then completed a dental implant residency program in Bessemer,

Alabama. McGee also has completed training in IV sedation, dental implants and bone grafting surgery, Invisalign and Six Month Smiles. He has special interests in dental implantology, oral pathology and management of oral diseases, TMJ disorders and orofacial pain. McGee maintains membership in the American Dental Association, the Louisiana Dental Association, the Academy of General Dentistry, the American Academy of Implant Dentistry, the Academy of Osseointegration and the International College of Oral Implantologists.

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implant into the nerve canal. Thanks to the scan, however, I knew exactly how to angle the implant into an anatomically safe position. The implant looked well-placed and had a positive prognosis (Fig. 3). The patient was pleased with how the technology helped her overall outcome and the lack of complications.

More detail, more applications

Three-dimensional imaging has opened new treatment options for other procedures beyond implants as well.

For instance, CBCT provides extremely

useful data in airway cases. One patient diagnosed with sleep apnea recently scheduled a consultation and brought his sleep study results with him. The CBCT scan I performed revealed a narrow airway, so I told him that based on his sleep study results, his airway was still occluded while he slept, even with the appliance in place.

He couldn't believe his airway when he saw the scan. "That's why I can't breathe and why I'm always tired," he said. "I need to have this treated." While he had been resistant to the idea of using a CPAP device while sleeping, once he saw the scan, he scheduled an appointment with his medical doctor to be evaluated for one.

My reputation among the medical community has also grown since I've included 3-D imaging in my practice. For example, a new patient, edentulous with upper and lower dentures, was referred to me by her oncologist. She had Stage 4 breast cancer, and her oncologist wanted a head and neck oral exam before starting chemotherapy to make sure there were no lesions in her mouth that might cause complications during treatment.

While everything looked good during the visual exam, the CBCT showed what appeared to be multiple bony lesions in the patient's jaw and vertebrae (Figs. 4–6).

I securely shared the information with the oncologist, who concluded that the cancer had metastasized to the patient's jaw

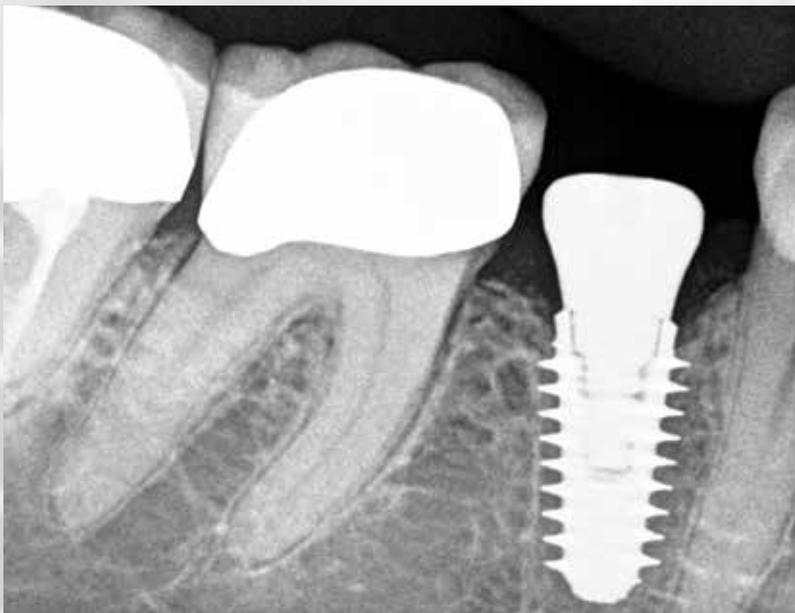


Fig. 3

and vertebrae. Impressed by the technology, the oncologist told me that he'll refer more patients to me because of this technology and tell his colleagues about it.

Raising the bar for predictability

Having 3-D imaging is an advantage, but I think that having an i-CAT machine has offered me even more benefits, such as being able to evaluate existing root canals and check the sinuses. I review the volume rendering with patients, showing their teeth, jaws and sinuses. Patients love seeing that view, along with the details that they can't see on a little PA or a panoramic.

The built-in implant planning software is user-friendly and provides different types of information imperative to implant placement. The software is also compatible with many different implant brands, so there are surgical planning options no matter which system is used. Anatomage lab users can plan a case and load it directly to the company's website, and the guide will be fabricated to specifications. This has made my implant cases much more predictable.

From implants to airway, and even to my comprehensive examinations, having 3-D views and additional capabilities from the software is practice-changing. It gave me as a clinician confidence in a more exact diagnosis. This technology has established a new standard of excellence for my dental practice and my patients. ■



Fig. 4



Fig. 5



Fig. 6