such as the inferior alveolar nerve canal, mental foramen, maxillary sinus, incisive canal, nasal floor, mylohyoid ridge and the location and morphologic variation of adjacent teeth. The data provided by the scan accurately locates such structures beforehand, so that they and potential iatrogenic injuries can be effectively avoided during surgery. Obviously, with traditional two-dimensional radiographs, I could visualize the general location of these entities and approximate the height of the alveolus, but a 3-D scan provided more information about the morphology of that ridge — its height and width to within a hundredth of a millimeter as well as its angulation and variation of its form. Currently, I feel that the scope of data garnered from the CBCT is imperative to place implants safely and correctly for the best restorative options, and this technology has indeed, altered my approach to dentistry. I continue to learn from each case that I perform by acquiring low-radiation limited postoperative scans, which help me become a better surgeon.

The clear, virtual, revolving model of the dentition captured on the CBCT scan can be rotated, zoomed in on from any angle and viewed in 360 degrees to assist in the determination of the implant site as well as for the fixture’s proper inclination, length and diameter. As an added benefit, there are numerous CBCT-compatible, implant-positioning software programs available, such as SimPlant®, NobelGuide™, EasyGuide® and Anatomage’s Invivo5. Besides its usefulness for implant patients, my CBCT has a myriad of other benefits. I use it to gain information for many of the procedures performed in my practice: extractions, diagnosis and treatment of pathology, orthognathic surgery, airway studies, dental, oral and maxillofacial trauma, bone grafting, and evaluation of the paranasal sinuses.

For example, a cone-beam image can show the relationship of a tooth to vital structures, such as nerves, the sinus or other teeth, that could make an apparently simple extraction into a complicated one or provide one with information to treat complex extractions more easily. Using preoperative three-dimensional reconstructions, like those produced by Invivo5, has become indispensable preceding my treatment of jaw tumors, congenital and developmental deformities and maxillofacial trauma.

In addition to educating me regarding preoperative planning, the CBCT allows patients to better understand the risks and potential iatrogenic injuries that could affect its success or failure. The CBCT information helps me formulate the correct diagnosis, whether I am planning an implant, simple or complex dental procedure, or just consulting. For my practice, I consider it not only to be the standard of care, but the gold standard for dental practice.