



## CT technology is good business

**C**T imaging has revolutionized health-care. Dentists and physicians can now deliver a higher level of care as a result of this cutting edge technology. Lung cancer is no longer a death sentence. Earlier detection of heart and breast disease, prior to symptomology, is now possible. Dental implantology has moved into the 21st century.

Lung cancer typically kills 95 percent of its victims, and only 15 percent of patients live for five years after being diagnosed. The October 26 issue of *The New England Journal of Medicine* published an article titled Survival of Patients with Stage I Lung Cancer Detected on CT Screening. There were 31,567 asymptomatic patients in seven countries who were at risk for lung cancer and underwent low dose CT scanning from 1993 to 2005. None of the participants had any symptoms, such as a cough or shortness of breath. The scanning resulted in a diagnosis of lung cancer in 484 participants; 412 of these patients had stage I lung cancer. The study projected that 80 percent would live for at least 10 years. Of the tumors that were removed within a month of detection, an astonishing 92 percent of patients are expected to survive for 10 years. The eight participants who did not receive treatment were dead within five years of diagnosis.

CT technology has been a godsend for me. I lost more than 70 pounds over 10 years ago. I went from morbidly obese to health conscious and trim. With better eating habits and regular exercise, I have maintained my weight. With all these changes, I assumed I was in excellent health. My blood pressure, heart rate and cholesterol levels were all exceptionally good.

I had a prophylactic CT heart scan. After the scan was formatted, the radiologist informed me that I was what their commercials were propounding. My left anterior descending artery (LAD), which supplies the left ventricle with blood, was nearly 80 percent occluded. I immediately saw a cardiologist who performed an angiogram and placed a medicated stent. My coronary vessels are now completely patent. I was back to work in two days. Even though I was symptom free, I felt markedly better following my treatment. Interestingly, the angiogram

results mirrored those of the CT scan.

The overwhelming consensus at October's Chicago National Meeting of the American Academy of Implant Dentistry was that CT scans are now the standard of care for implant dentistry. Traditional radiographs, such as the Panorex, are two-dimensional and have inherent distortion.

According to Scott D. Ganz, DDS, maxillofacial prosthodontist, in *Dental Implantology Update*, (Dec. 2005): "CT imaging can help clinicians improve all aspects of implant reconstruction, including both restorative and surgical phases while diminishing complications of malpositioned implants." He reports that computed tomography in dentistry can give "the ability to better assess anatomy, whether for pathology or for the potential placement of dental implants."

Implants can now be placed virtually on the CT image. A precise guide can then be constructed so that this information can be duplicated. A provisional or a final restoration can also be fabricated from this data and delivered at the time of implant placement. This can all be achieved with flapless surgery. Osseous and soft tissue grafting can also be achieved to a more accurate level due to the information from the scans.

The i-CAT and new Tom 9000 scanners both utilize 3D cone beam technology. Conventional hospital CTs use fan-beam technology. The radiation doses for the cone beam machines are quite minimal. They have been reported to be between 2 and 4 panoramic exposures per scan, depending on the machine and the scan time utilized. From one scan, one can precisely assess the anatomy of both jaws, the maxillary sinus, TMJs and the inferior alveolar nerve canals. The scans can be formatted in the axial, coronal and sagittal planes. These scans are accurate to the nearest tenth of a millimeter.

We have had our i-CAT scanner for more than two years and each scan still excites us, our patients and referring clinicians. Anatomy we used to guess at is now visible. In my opinion, to practice implant dentistry without considering CT technology is a disservice to our patients. ■

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