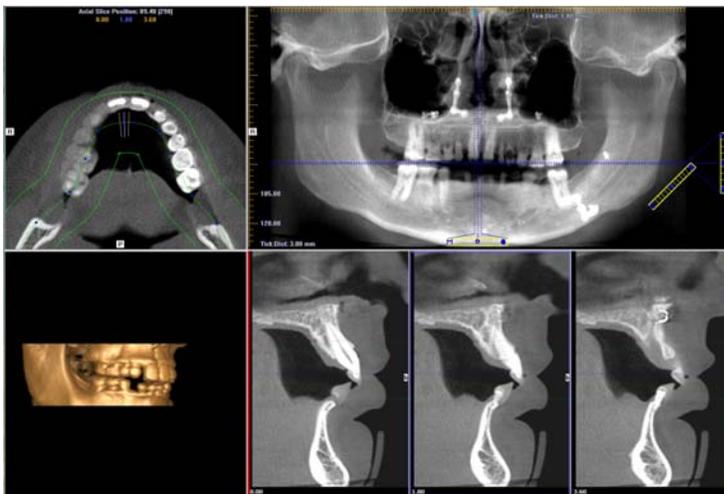
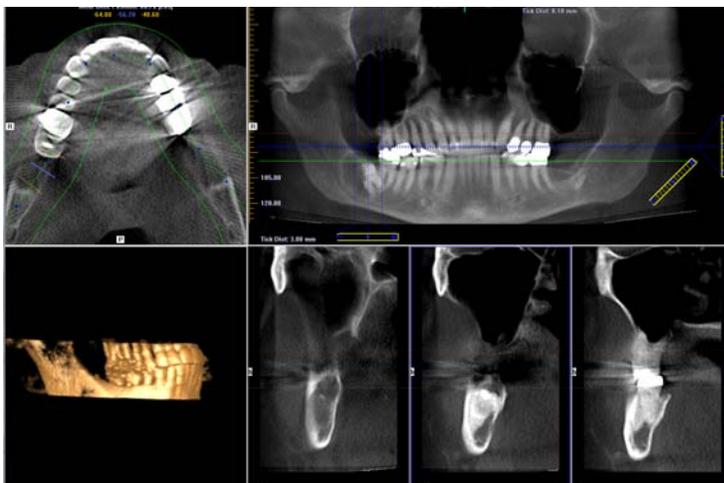


Cone Beam Volumetric Tomography (CBCT), In The Dental Practice

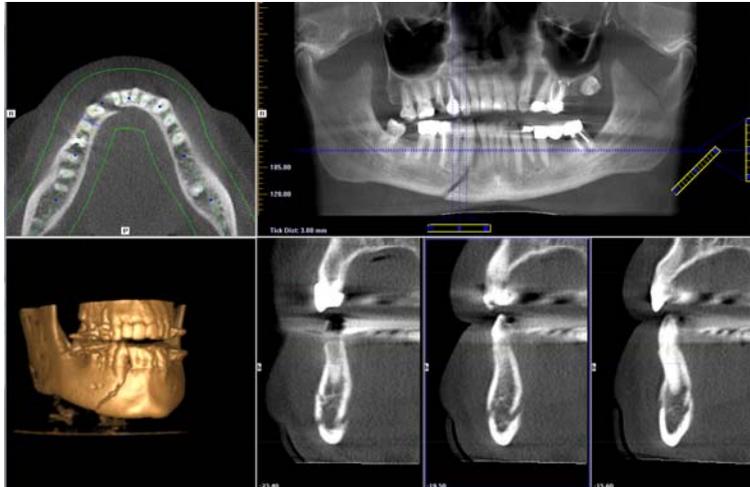
Nothing has captured the dentist's imagination like the introduction of cone beam tomography, (CBCT). These machines image acquisition process differs from that of traditional medical CT scanners in that the patient is not in the supine position, the image gathered is in a voxel format, the radiation dose absorbed by the patient is substantially lower. CBCT makes clinical decision making easier and more precise. Dentistry is moving away from "radiographic interpretation" and into "disease visualization". The advantages of CBCT in visualizing the alveolus in 3 dimensions and making precise measurements before surgery are obvious in the field of implant dentistry. It reduces the likelihood of the need to change the treatment intraoperatively.



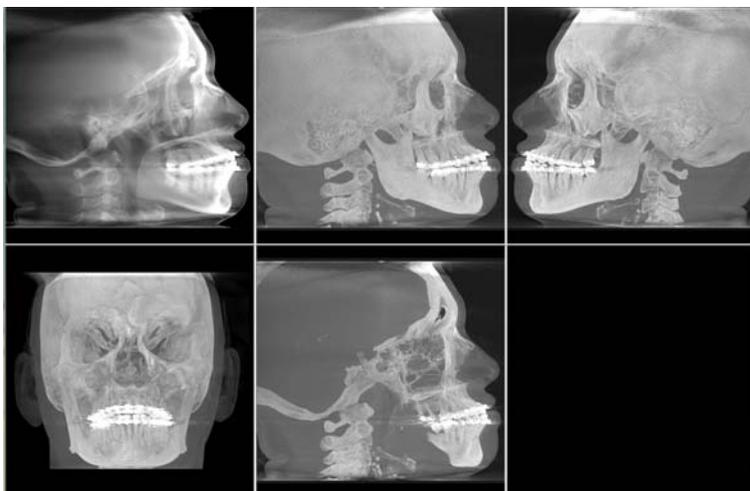
Conventional CT is used routinely for the diagnosis of maxillofacial pathology. Given the higher resolution, lower radiation dose, and lower cost of CBCT it can easily replace the conventional CT in this regard. Three dimensional imaging of cysts and tumors of the maxillofacial region can give the surgeon the vital information necessary for planning surgery.



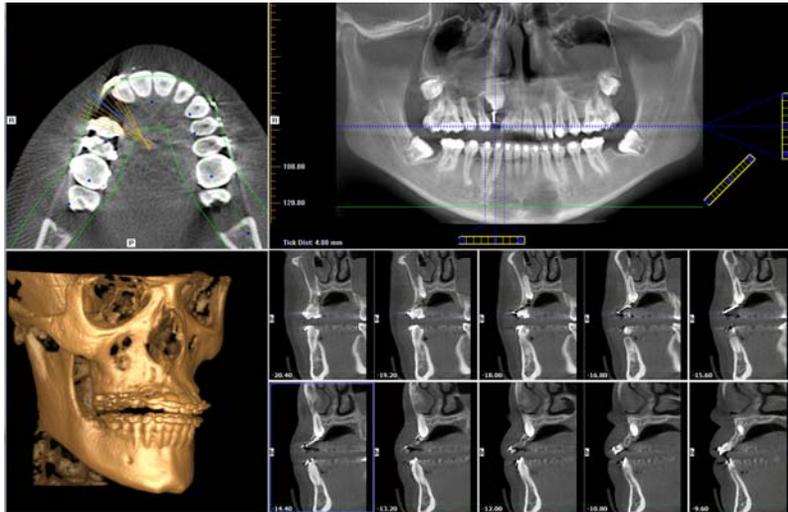
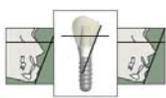
The diagnosis and treatment planning of TMJ disorders are challenging. Although magnetic resonance imaging remains the gold standard for imaging the intra-articular components of the TMJ, CBCT has shown to provide a complete radiographic evaluation of the bony components of the TMJ.



There is a clinical use for diagnosis & treatment planning in orthodontics & orthognathic surgery in a 3 dimensional fashion as well. There is a possibility to fabricate three dimensional models & surgical splints.



The identification & treatment planning and evaluation of potential complications of impacted teeth are greatly improved by adding the third dimension through CBCT. The site evaluation becomes not only less invasive and less time consuming but also more complete.



In November of 2010 a world known newspaper published an article establishing the concern about radiation exposure secondary to CBCT. It is well established that the radiation exposure of a 2D panoramic radiograph is equivalent to 2-3 days of natural radiation exposure a CBCT is about 11 days of such natural radiation exposure. Being that said, it has been proven in scientific papers & clinical practice that the precision CBCT scans assists in precise diagnosis and treatment plans with the goal of better clinical outcomes. Multiple applications have been applied for dental diagnostics including dentoalveolar surgery, pathology, orthognathics, trauma, and endodontics.

It is our belief that there is an important role for CBCT in today's practice. It is important to have an indication for its use, taking into consideration not to over-expose patients to non indicated procedures as in any other medical field, but the information offered by this CBCT technology is very helpful in many clinical situations.

About the Author

Eduardo Nicolaievsky D.D.S.



Dr. Nicolaievsky is an experienced oral surgeon who is a well-known and respected Oral and Maxillofacial Surgeon Implantologist in Mexico City for over 15 years. He attended the Universidad Tecnológica de México, where he earned his dental degree. He came to the United States, University of Miami/Jackson Memorial Medical Center, for his residencies and completed programs in both Dental Anesthesiology and Oral & Maxillofacial Surgery.

Dr. Nicolaievsky was an Associate Professor at the Universidad Tecnológica de México for many years. He is continually seeking ways to learn and grow in his oral surgery and dental implant

services as technology continues to provide new and exciting ways to improve care.

Dr. Nicolaievsky is a Fellow of the American Association of Oral & Maxillofacial Surgery and a Diplomate of the American Board of Oral & Maxillofacial Surgery. Dr. Nicolaievsky decided to move to the United States and we are pleased to have such a skilled surgeon in our practice. He enjoys golfing, soccer, biking, and spending time with his wife and three daughters. If you have any questions or comments, you can contact Dr. Nicolaievsky at enico@drblumorasurg.com.

Suggested reading.

Gwen R.J., Swennen M.D., "THREE DIMENSIONAL TREATMENT PLANNING OF ORTHOGNATHIC SURGERY IN THE ERA OF VIRTUAL IMAGING", J. Oral Maxillofac. Surg., Vol. 67-2080, 2009

Quereshy F.A. et al, "APPLICATIONS OF CONE BEAM COMPUTED TOMOGRAPHY IN THE PRACTICE OF ORAL & MAXILLOFACIAL SURGERY", J. Oral & Maxillofacial Surg., Vol.66-791, 2008

Mah J., Hatcher D., "THREE DIMENSIONAL CRANIOFACIAL IMAGING" Am. J. Orthod. Dentofac . Orthop., Vol. 126-308, 2004.