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The current state of cone beam CT(CBCT) 3D imaging in dentistry

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The introduction of Cone Beam CT (CBCT) constitutes a paradigm shift in the way clinicians acquire and view radiographs. Unlike intraoral or panoramic radiographs, there is no magnification and no superimposition of structures. CBCT volumetric imaging provides unprecedented highly detailed radiographic information about the patient's teeth, bone, jaws, and airways spaces. This information can be used for diagnosis and treatment planning including implant planning, detection of root fractures, assessing the relationship of an impacted wisdom tooth to the mandibular canal, sleep apnea studies, growth assessment, pre and post-surgery assessment, and pathology.However, with CBCT, there is increased financial costs and radiation exposure to the patient. It is important that clinicians understand the advantages and limitation of this technology for better diagnosis and treatment planning of their patients. With many machines available on the market and more coming each year, it can clearly be seen that this technology is taking a big role in the field of dentistry. This purpose of this presentation is to: (i) review principles of action of CBCT; (ii) compare radiation dose of different machines; (iii) highlight clinical cases for use of CBCT in dentistry and how it can be used as a tool to aid in diagnosis and treatment planning of different cases in dentistry.

Biography

Wisam Al-Rawi has completed his MSc degree in Medical Imaging (oral imaging option) from K.U.Leuven, Leuven, Belgium in 2006 and MS degree in Oral and Maxillofacial Radiology from the University of North Carolina at Chapel Hill, NC, United States in 2009. He is currently holding an adjunct Faculty position at the University of Detroit Mercy School of Dentistry and studying in the Accelerated Dental Program. He founded Marcilan Inc. A company dedicated for oral radiology education and created two educational apps in oral radiology for iPhone and iPad: CBCT and iPanoramic. He helped two dental schools to move to digital radiography. He has published several papers regarding Cone Beam CT and oral radiology education in 1985.Subsequent to that Bill was awarded the status of a Diplomat of the American Academy of Periodontology in 1998. Bill divides his time between a private practice that is limited to Periodontology and Implantology, as well as active research focusing on inflammation and tissue repair. To date Bill has registered over 10 patents based on his research in these areas and a number of these patents have transitioned into dental products. At present Bill is the CEO of Izun Pharmaceuticals a company developing products for many therapeutic areas including oral care, oncology and diabetes.

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