

## Cone Beam Computed Tomography: A New Trend for Craniofacial Treatment Planning

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Respected Editor,

With reference to an excellent article published in your esteemed journal recently regarding the use of cone beam computed tomography (CBCT) for the detection of external root resorption,<sup>[1]</sup> I would like to add some vital information on the use of CBCT in craniofacial field in the present era. CBCT allows the creation in “real time” of images not only in the axial plane but also 2-dimensional images in the coronal, sagittal, and even oblique or curved image planes – a process known as multiplanar reformation (MPR). Also, CBCT data are amenable to reformation in a volume, rather than a slice, providing 3-dimensional (3D) picture and information. The value of CBCT imaging in dental implant planning, surgical assessment of various oral pathologies, assessment of temporomandibular joint, and pre- and post-operative assessment of craniofacial fractures and trauma has been reported.<sup>[2,3]</sup> CBCT imaging is now being directed toward 3D cephalometry and detection of orthognathic deformities. Being considerably smaller, CBCT equipment has a greatly reduced physical footprint and is approximately 20-25% of the cost of conventional CT. CBCT provides images of high contrasting structures and is therefore particularly well-suited toward the imaging of osseous structures of the craniofacial area, providing an easy and accurate treatment planning. CBCT advantages include rapid scan time, image accuracy, beam limitation, and reduced patient radiation dose

compared to conventional CT. CBCT is capable of providing accurate, sub-millimeter resolution images in formats enabling 3D visualization of the complexity of the maxillofacial region. CBCT examination has been found useful in preoperative diagnostics prior to the surgical removal of lower impacted third molars. In a recent study, CBCT was found to be superior to panoramic images in predicting neurovascular bundle exposure during the extraction of impacted lower third molars.<sup>[4]</sup> Though CBCT is of tremendous use as mentioned above, further technical improvements to CBCT devices can be anticipated in the future.

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