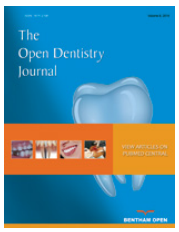

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EDITORIAL

# '3D in Dentistry'

Junaid Ahmed[1,*]

[1]*Department of Oral Medicine & Radiology, Manipal College of Dental Sciences, Mangalore, India*

Imaging is a significant diagnostic addition in the clinical evaluation of dental patients. Although periapical and panoramic imaging films have been the gold standard for years, their inherent distortion factors limit these two-dimensional (2D) film images. Three-dimensional imaging (3D) has made complex craniofacial structures accessible for examination with minimal distortion. With an increasing array of imaging modalities, whether it be intraoral scanning or radiographic imaging, digital imaging has taken an unprecedented hold in dentistry. 3D view of the maxilla, the mandible, and the supporting structures with relatively high resolution allows a more accurate diagnosis, treatment planning, and analysis of outcomes superior to conventional 2D images, along with the advantage of low radiation exposure to the patient when compared to the conventional Computed Tomography (C.T) machines.

Technological advances in diagnostic imaging like C.T, Cone Beam Computed Tomography (CBCT), Magnetic Resonance Imaging (MRI), and Ultrasonography have an important role in modern dentistry. CBCT scanners have evolved into a new dimension, 'Ultra cone-beam CT scanners.' Ultra CBCT imaging provides important information about the 3D structure of blood vessels, nerves, soft tissue, and bone. Modalities like ultrasound technology can acquire hard and soft tissue data without emitting radiation. 3D ultrasonography can be used in restorative dentistry in the future for dental scanning, caries detection, dental fractures, maxillofacial fractures, temporomandibular disorders, and implant dentistry.

* Address correspondence to this author at the Department of Oral Medicine & Radiology, Manipal College of Dental Sciences, Mangalore, India;
E-mail: junaid.ahmed@manipal.edu

MRI techniques are currently being used in dentistry to diagnose temporomandibular joint diseases, examine salivary glands and maxillary sinuses, and detect early bone changes, fractures, and inflammatory conditions. More recently, MRI has found an application in implant dentistry. It has become one of the best methods in recent decades because of its non-invasiveness, non-ionizing radiation, and ability to differentiate between soft and hard tissues. A newer technology called 'SWIFT MRI' offers simultaneous three-dimensional hard and soft tissue imaging of teeth.

3D printers and 3D scanners dedicated to dental work have been developed and are becoming an integral part of a 3D digital workflow, with 3D printed braces, 3D printed implants, and dental crowns being some of its more popular applications. A lot of 3D modelling softwares dedicated to the medical industry are now available.

The present thematic issue is dedicated to '3D in Dentistry'.We hope our issue creates a growing awareness of the importance of information gained from these advanced imaging technologies. The present and the future implications of 3D technology in dentistry have empowered clinicians worldwide with superior capabilities for better diagnosis, accurate treatment planning, and improved prognosis for patients.

## CONFLICT OF INTEREST

The author declares no conflict of interest, financial or otherwise.

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