

Oral and Maxillofacial Radiology in Contemporary Dentistry “Gains and Constraints”

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INTRODUCTION

Oral radiology has ever been a non-detachable part of the dental treatment, starting from the intraoral radiographs and ending to the cone beam computed tomography (CBCT). However, radiation carries its hazards and should cautiously be used. According to the availability of the imaging modalities and the radiation dose delivered, the clinician should choose the best to elucidate the clinical situation without exposing the patient to unnecessary radiation.

In this respect, the ADA council of scientific affairs developed guidelines for the prescription of dental radiographs and stated that dentists should weigh the benefits of dental radiographs against the consequences of increasing a patient's exposure to radiation and implement appropriate radiation control procedures [1].

The introduction and evolution of digital radiography and the enormous technological development in computerization thereafter have put digital imaging more forward to conventional film imaging. With digital radiography, high-quality images are obtained while reducing the dose to both the patient and the operator.

Moreover, digital imaging is time and space saving; eliminates the use of films and processing chemicals, allows for image enhancement and feature extraction, permits image analysis and taking linear and angular measurements especially in endodontic treatment and dental implant planning facilitates, impressive to patients, besides, it opens the way to electronic communication for consultations through the Digital Imaging and Communications in Medicine (DICOM) file format standard [2, 3].

The latest advancement in digital imaging is reached by the CBCT breakthrough that allows 3D visualization of the oral and maxillofacial complex. This imaging modality eliminates the shortcomings of 2D imaging and offers radiation dose reduction than medical CT. This innovation enables clinicians to make more accurate diagnosis and treatment planning in complicated cases, which can lead to more successful dental and surgical procedures [4].

The availability of CBCT is also expanding the use of additional

diagnostic and treatment software applications, all directed toward 3D visualization, because CBCT data can be exported in the non-proprietary DICOM standard. Diagnostic and planning softwares are available to assist in orthodontic assessment and analysis, dental implant planning, virtual implant placement, surgical guide fabrication and even to assist in the computer-aided design and manufacture (CAD-CAM) of implant prosthetics [5].

Yet, the literature concerning dental digital X-ray systems pays little attention to their use in actual clinical practice, further, there is need for evidence-based assessment of what image qualities are essential for various dental radiographic diagnostic tasks to provide a higher standard of care [6]. Therefore, the journal is welcoming research articles that can serve the scientific field and the community as well.

Through this journal, it is intended to provide an updated knowledge in every aspect of oral and maxillofacial radiology technicalities and applications in the dental practice. Besides, a worldwide dissemination is an essential target to be achieved.

I hope that the articles published in the journal be beneficial for all the readers and solve problems in various clinical scenarios.

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