

23rd International Conference on

Dentistry and Dental Materials

July 19-20, 2018 | Rome, Italy

Comparison the accuracy of cone beam computed tomography (CBCT) and digital periapical radiography in determining horizontal root fracture

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Diagnosis of horizontal root fractures (HRF) base on clinical and radiographic documents. The aim of this study was to compare the diagnostic accuracy of digital periapical graphs (PSP) with different angulations in different location and Conebeam Computed Tomography (CBCT) in the detection of HFR in central and lateral maxillary incisors. For this experimental study, 60 human central and lateral maxillary incisors were selected and were divided in 4 groups and were numbered. In the first group root fractures were created by using mechanical force in the apical third, in the second group were in the middle and the third group were in the cervical part's of roots, the last group were considered as control group with out any fractures. The two fragment from each tooth were relocated with super glue. Then, radiographic image of all the teeth were taken using digital PSP and CBCT methods. Afterwards, two oral and maxillofacial radiologists assessed the image separately, the data were subjected to specificity and sensitivity for each radiographic technique. The Kappa statistics was used for assessing the agreement between observers. Significant level was considered as $p < 0.05$. CBCT method has higher specificity and sensitivity in the detection of HRF compared to PSP. Kappa value for inter-observer agreement in HRF is equaled $.89$ for CBCT and $.72/5$ for PA. CBCT, out performed the PSP method in detecting simulated HRF. CBCT should be consider as reliable imaging modality of choice for the diagnosis of HRF.

Biography

Sanaz Jahadi graduated as a General Practitioner from School of Dentistry Isfahan University of Medical Sciences and continued Postgraduation studies in Endodontics in School of Medicine. She was as an Assistant Professor in this school for 5 years. She has published 5 papers and now is a Member of Torabinejad Dental Research Center and works as a private Endodontist.

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