

Comparative assessment of periapical radiography and CBCT imaging for radiodiagnosics in the posterior maxilla

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Abstrak

Close proximity of the maxillary roots and the sinus floor makes a dental disease a probable cause of maxillary sinusitis. The aim of this study was to evaluate the ability of periapical radiography and cone beam computed tomography in defining the topographic relationship of maxillary teeth to the sinus floor and detecting apical periodontitis and other odontogenic causes of the maxillary sinusitis. Out of 145 dental records from subjects (mean age 52 years, range 20-75 years; 89 females) referred to the Oral Imaging Centre, KU Leuven, periapical and CBCT images of the posterior maxilla were selected for further analysis. Anatomical relationship of maxillary teeth to the sinus floor, apical periodontitis and other etiological causes of soft tissue thickening were assessed with both imaging modalities. The results of this study demonstrated that periapical radiographs are not adequate in observing the anatomical relationship between maxillary molars and the sinus floor. CBCT showed an intimate relationship of 1st and 2nd molar with the maxillary sinus in 50 and 45% of the cases, respectively. Periapical radiography could only spot approximately 40% of apical periodontitis on posterior maxillary teeth and 3% of all apical infections extending to the sinus, seen on CBCT.