

Radiation dose as a factor in the choice of routine pre-operative dental radiographs

Abstract:

Radiation doses received by patients during dental x-ray examinations were measured in 95 patients referred to the X-ray Department of the Teaching Dental Hospital, University of Nairobi. The mean skin dose for single periapical films was 5.96 milligray (596 millirads) with the bitewing view recording a mean dose of 5.57 milligray (mGy). During a 14-film full-mouth periapical survey, mean doses ranged from 10.3-16.2 mGy for the upper jaw and 10.1-13.5 mGy for the lower jaw, respectively, depending on the region of dentition. In these full-mouth examinations, the distribution of skin dose over different parts of the dentition showed a characteristic pattern which may be explained by the overlap of radiation fields in the aggregated series of exposure. Orthopantomography recorded lower mean skin doses of 3.26 mGy in the molar region and 2.67 mGy at the posterior midline at the level of the 2nd cervical vertebra. The relative merits of intra-oral radiography versus orthopantomography are discussed, with radiation dosage as one of the factors to be considered. Some observations are made on measures to reduce patient dose.