Postmortem computed tomography age assessment of juvenile dentition: comparison against traditional OPT assessment

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Abstract (English): Age estimation is one of the primary demographic features used in the identification of juvenile remains. Determining the accuracy and repeatability of age estimations based on postmortem computed tomography (PMCT) data compared with those using conventional orthopantomography (OPT) images is important to validate the use of PMCT as a single imaging technique in forensic and disaster victim identification (DVI). In this study, 19 juvenile mandibles and maxilla of known age underwent both OPT and PMCT. Three raters then estimated dental age using the resulting images and 3D reconstructions. This assessment showed excellent agreement between the age estimations using the two techniques for all three observers. PMCT also offers a greater range of measurements for both the dentition and the whole human skeleton using a single image acquisition and therefore has the potential to improve both the speed and accuracy of age estimation.

MeSH: Adolescent; Age Determination by Teeth -- methods (major); Child; Child, Preschool; Dentition; Forensic Dentistry; Humans; Imaging, Three-Dimensional; Infant; Multidetector Computed Tomography (major); Observer Variation; Radiography, Panoramic (major); Tooth -- radiography; Young Adult

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