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Direct and indirect age estimation methods for primary teeth

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Age estimation from primary teeth is an important matter for forensic odontology, which can be solved with the application of direct or indirect age estimation methods that are functions of tooth measurements. The most distinctive teeth among these are the central incisors because of their early development. The aim of this study is to determine the age of fetuses or infants by measuring the tooth development from the labio-lingual, mesio-distal, crown height, crown thickness, and root and tooth height. The data were statistically processed by regression analysis and regression formulas were derived. Age of teeth could also be estimated through the calculation of indirectly obtained data from the computerized tomography digital image measurements, where new regression formulas were derived. This method was proposed as Virtual Dental Identification (VirDent-ID) by the authors PS. Aka and N. Canturk, and is a matter of choice instead of traditional methods. Same dental measurements were tested on the image measurements and reliable results were obtained. The results revealed that age could be estimated from various tooth dimensions within an accuracy of $\pm 0-2$ weeks for both methods. The best measurements for age estimation can be obtained from the longest vertical dimension, which is the tooth height, and the best age estimation formula was also generated from the tooth height. In conclusion, age formulas derived from direct or indirect measurements of fetus or infant tooth development stages may be used as an aid for dental identification, until the completion of upper central primary tooth development.

Biography

P Sema Aka graduated from the Dental Faculty of Ankara University in Turkey in 1979, earned PhD degree in 1983, Associate Professorship in 1986, and full Professorship in 1993, at the age of 38 years. She has international publications in the field of dental sciences and forensic odontology. She is the founder of the Forensic Odontology Unit and Head of the Forensic Odontology Committee of the "Forensic Scientists Society." She is one of the editors of the *Turkish Journal of Forensic Sciences*. She retired from Ankara University in 2007 and recently working as an independent researcher.

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