Comparison of the Accuracy of Two Methods of Age Estimation Based on Radiography of the Developing Teeth

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Abstract

Statement of Problem: Dental age estimation methods are used in the treatment plan and identification of the age of unknown corps and skulls. One of the methods of age estimation is Foti method which is based on regression analysis of dental variables (number of tooth germs and erupted tooth) for which four models have been proposed.

Purpose: The aim of the present study was to compare the dental age derived from these four methods with the Demirjian method on the basis of chronological age.

Methods and Material: In this cross-sectional descriptive study, 150 panoramic radiographs of 90 girls and 60 boys aged 6-20 years were studied. The variables required for regression analysis were derived from clinical examinations and panoramic radiographs. Demirjian age was determined using panoramic radiographs.

Results: The mean chronological age was 10.74±3.02, Demirjian age 11.16, ± 2.76, model one 11.57±1.61, two 11.44±2.35, three 11.53± 2.49 and four 11.24±1.85 years. The comparison between chronological age, Demirjian age and regression models showed a statistically significant difference. The obtained ages from Demirjian methods and regression models were shown to be overestimated.

Conclusion: A positive association was found between the real ages and age estimates derived from these four models. The equations allow age estimation in specific situations (such as when only either the maxillae or mandible is available or when the radiography is not available).

Key words: Dental age estimation, Erupted teeth, Forensic odontology