

Role of Pulp Volume Method in Assessment of Age and Gender in Lucknow, India, an Observational Study

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Abstract : Age and gender determination are required in forensic for victim identification. There is secondary dentine deposition throughout life, resulting in decreased pulp volume and size. Evaluation of pulp volume using Cone Beam Computed Tomography (CBCT) is a noninvasive method to evaluate the age and gender of an individual. The study was done to evaluate the efficacy of pulp volume method in the determination of age and gender. Aims/Objectives: The study was conducted to estimate age and determine sex by measuring tooth pulp volume with the help of CBCT. An observational study of one year duration on CBCT data of individuals was conducted in Lucknow. Maxillary central incisors (CI) and maxillary canine (C) of the randomly selected samples were assessed for measurement of pulp volume using a software. Statistical analysis: Chi Square Test, Arithmetic Mean, Standard deviation, Pearson's Correlation, Linear & Logistic regression analysis. Results: The CBCT data of Ninety individuals with age range between 18-70 years was evaluated for pulp volume of central incisor and canine (CI & C). The Pearson correlation coefficient between the tooth pulp volume (CI & C) and chronological age suggested that pulp volume decreased with age. The validation of the equations for sex determination showed higher prediction accuracy for CI (56.70%) and lower for C (53.30%). Conclusion: Pulp volume obtained from CBCT is a reliable indicator for age estimation and gender prediction.

Keywords : forensic, dental age, pulp volume, cone beam computed tomography

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