SDM
College of
Dental Sciences
& Hospital

"DIGITAL RADIOGRAPHIC EVALUATION OF SINGLE ROOTED TEETH FOR AGE ESTIMATION BY ANALYZING PULP/TOOTH AREA RATIO"

By

DR. PRIYANKA AGRAWAL

Dissertation submitted to the
Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka

In partial fulfillment
Of the requirements for the degree of

MASTER OF DENTAL SURGERY (M.D.S)
In
ORAL MEDICINE AND RADIOLOGY

Under the guidance of

t-1202

DR. KRISHNA N BURDE

PROFESSOR AND HEAD

DEPARTMENT OF ORAL MEDICINE AND RADIOLOGY

S.D.M COLLEGE OF DENTAL SCIENCES & HOSPITAL, DHARWAD

MAY 2018

ABSTRACT

BACKGROUND AND OBJECTIVES: The rationale of human identification comprises of social, legal and forensic aspects. Radiology is distinctly advantageous by being a quick,cheap and non invasive procedure. In order to examine the patterns of secondary dentin apposition , the pulp tooth area ratio has been extensively studied by panoramic and periapical radiographs in order to examine the relationship between age and age related changes in the pulp/tooth area ratio in monoradicular teeth. The present study aims at the assessment of age by the application of age parameters in Indian sample of intraoral periapical digital radiographs of monoradicular teeth and verify the amount of correlation between actual age and the estimated age obtained by measuring the pulp/tooth area ratio on single rooted teeth.

METHODOLOGY:. In the present retrospective study of 110 subjects, a total of 199 intraoral peripical digital radiographs were scrutinized. The evaluated teeth included Maxillary central and lateral incisor, mandibular central, lateral, canine, first and second premolar. The subjects comprised of 28 females and 72 males in the age range of 20-70 years , maximum number of subjects being in the age range of 30-50 years. Planmeca Dimaxis imaging software for using RVG from the department of Oral medicine and radiology, SDM College of dental sciences and hospital and Adobe Photoshop 7.0 was

used for the evaluation of PTR.

RESULTS: The individual teeth did not show a statistically significant difference in the error rate when compared with each other. The lower central incisor showed the minimum error rate as compared to the other teeth. A statistically significant difference was observed between the estimated age and actual age (p value 0.0002). Lower Ist Premolar (0.0071) and Upper Lateral incisor (0.0062) revealed the maximum mean absolute error and thus a larger statistical difference and minimum closeness to the actual age.

CONCLUSION: With the several studies done to estimate age by using population specific equations in association with the present study, it can be inferred that no particular tooth can be used in isolation to determine the age of an individual. These particulars support a multifactorial approach and figures out the use of multiple age indicators such as the dental status and bone development .

KEY WORDS: Forensic odontology, Age estimation, Single rooted teeth , Pulp/tooth area ratio.