

Estimation of age using third molar development

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Aim: The aim of this study is to obtain and analyze data regarding third molar development and eruption for dental age estimation.

Background: The dental age can be assessed among young children with greater accuracy. This is because many children are undergoing development and calcification simultaneously. However after the early teens most teeth have calcified and erupted except the third molar. This makes the third molar development the most important choice for age assessment from the late teens to early twenties. Radio graphic evaluation of mineralisation and eruption stages of third molars using dental radiograph ides can be an efficient tool for chronological age estimation in both forensic sciences and legal medicines. The third molar tooth is utilised for dental age estimation about the age span of 15 to 23 because it represents the only tooth still in development.

Materials and methods: 50 radiographs are required for this study. The eruption stages should be recorded using radiographs.

Objective: To determine the age using third molar development

Reason: To know about the dental age from the eruption of third molar

INTRODUCTION:

Age estimation is one of the important duties of the medico legal officers in recent time as crimes of varied nature are increasing and age constitutes an important factor in relation to the assessment for the award of sentences in all these instances and in all these matters age is inseparably related. To establish the identity of an individual, age estimation is necessary not only in cases of living but also in the dead too. When one must identify a deceased individual, accurate determination of the age of the person is very important. Teeth, which provides the life history of an individual contribute as a reliable means of determining age from approximately 10 weeks intrauterine up to old age.' Determining dental age using stages of tooth development and eruption, structural changes on these teeth and the changes in the chemical composition of teeth have been successfully advocated by many researchers. Difficulty in human age estimation after 14 years of age has greatly shifted the focus on development of third molar, also commonly referred to as wisdom teeth. The third molar evaluation would be beneficial in various ways as in orthodontics, pedodontics, oral surgery and in assessing the possibility of autogenous tooth transplantation. This paper presents statistical measures on the time course of third molar eruption.

MATERIALS AND METHODS:

Materials for our study comprised of orthopantograms 280 samples of which 52% were male's and 48% were female's. The age group of study ranged from 14-65 years. Patient identification number, sex, date of birth, and eruption stages of the third molars were recorded for each individual subject. Orthopantograms were excluded if the molars were missing, if there was obvious dental pathology, or if image deformity affected the area of interest. Age development was evaluated according to the method of Ozle s method.

Orthopantogram of each sample was taken. Each of these orthopantogram was studied for four different stages of development of the third molars by methods adapted by Ozles method:

Stage A - Occlusal plane covered with alveolar bone.

Stage B - Alveolar eruption; complete resorption of alveolar bone over occlusal plane.

Stage C - Gingival emergence; penetration of gingiva by at least one dental cusp.

Stage D - Complete emergence in occlusal plane.

DISCUSSION:

Age estimation for medicolegal purposes represents a fundamental problem, and various methods have been established for age determination. Numerous reports have been published on the age estimation issue concerning adolescents and young adults in which the assessment of third molar development was frequently investigated.

Jashwant A. Darji and Et al has done a research work on April - June 2011 for age estimation using third molar development - A radiological study.

Szilvia and Et al on May 2004 has done a radiographic survey of third molar development in relation to chronologic age.

Arati.s panchbhai and Et al has done a research on radiographic evaluation of developmental changes of third molar.

An olze and Et al has done a research work on dental age estimation based on third molar development.

According to the results obtained from statistics the ages found was from 14 – 65. The reliability of age estimation reduced in older age groups. The possible reasons might be the reduction of the criteria and signs for the age estimation of OPGs in older persons and the variability of the oral health status of patients in older age groups. Age estimation with OPGs can be used to make a significant percentage of forecasts in areas such as forensic medicine and forensic dentistry, especially in young patients. In overview the developmental stages of the third molar can be the only quantitative biologic variable available for the estimating the age of a person in his/her late teens or early 20s, but due to the considerable variability of the third molar detracts from precise age estimates, it can be suggestive in the absence of better information.

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