Title: Comparison of Radiological Epiphyseal and 3rd Molar Changes for Clinical Age Estimation between Young Living Malaysian Subjects with Young Indian Subjects

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Abstract

Introduction: The clinical estimation of age in the living usually centers round the accused of crimes, and victims of sexual assault. Bony age has been always considered the most reliable parameter for determining the age, from the early intra-uterine period [1]. This study was undertaken in an attempting to determine the differences, if any, between the various ossificational changes among major races of Malaysia and comparison with those used routinely for clinical age estimation at Maulana Azad Medical College, New Delhi by one of the authors.

Method: X-rays of otherwise healthy Malaysians, of authenticated ages between 12 and 24 years, were selected from about 8000 X-rays screened and segregated according to sex and race (i.e. Malays, Chinese & Indians) respectively. Victims of trauma were selected, who did not show involvement of the respective joints studied. The shoulder, elbow, wrist, hip and pelvis were studied for epiphyseal changes, and mandibles for calcification of the 2nd and 3rd molars.

Observations: The order of fusion of epiphyses was earliest in the elbow region, followed by the shoulder and wrist for the long bones. The pelvis – iliac crest completed epiphyseal fusion last of all. Mandibular 3rd molars calcification nearly corresponded with New Delhi figures [6]. The ossification ages were nearly the same in all races except the hip region, where the Malays showed earlier appearance and later fusion, among the three races studied, with females earlier than males.

Discussion: Comparison of the Malaysian males and females showed that they generally conformed with earlier studies by Galstaun [2] and Flecker [3] compared to English figures [4]. The ages of fusion of epiphyses were closer to the Indian Bengalis’ studied [2] earlier, and differ from the New Delhi figures comparing North and South Indians living there [5]. However certain universal generalizations still apply, i.e. that the females have their ossification changes in their bones taking place at least a year earlier, compared to the males.

Conclusion: The role of clinical age estimation appears a viable option in those cases where the age is being disputed in criminal matters. The ossification data suggest that compared to the Indian subjects, the three races of Malaysia (including ethnic South Indians of Malaysia) have earlier appearance and fusion of most of the epiphyses, excepting in the pelvic region. There is also a slight racial difference, which is difficult to quantify as the number of cases available for study were few, especially in females in some of the younger age groups.

Bibliography:

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2. Galstaun G. A study of ossification as observed in Indian subjects. Ind. J Med

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