

Editorial

Forensic Anthropology (Bioarchaeology) in Dentistry

Forensic anthropology is a well-developing discipline within the forensic field. Anthropology helps in identifying individuals from the bones when other physical characteristics which could be used to identify a body no longer exist. During 1940s, Krogman, the first anthropologist publicized anthropologists' potential forensic value with ability of anthropologists to assist in identification of skeletal remains. The professionalization and recognition as a separate field was formally established as a section in the American Academy of Forensic Sciences in 1972. In India, even today, the status is not much better as has been recognized in the United States.

The science of forensic medicine looked for assistance in their "Reconstructive and Investigative medicine" toward the subject of anthropology which is in the nutshell, the study of man. Anthropology deals mainly with man's physical makeup and his pattern of social and cultural behavior in the present and past. The two major divisions of anthropology are physical and social anthropology. When the knowledge of physical anthropology applied to crime investigation and reconstruction, it becomes forensic anthropology.

The forensic anthropologist contributes to the investigations related to destruction trauma as in explosion, air and land crashes, fire, chemical destruction, cases where bodies have been disposed of, and have become skeletonized and in archeological excavation. The science of this field includes photographic superimposition, facial reproduction, and determination of time since death, analysis of past injury and medical treatment, anatomical variant, and identity of skeletal human remains.

First, the forensic anthropologist decides whether the remains are human or animal or inorganic material. After the decision as human remains, he proceeds to estimate the physical norms such as stature, estimation of age at death, racial affiliation, sex, and health. Anthropologist also expertise to suggest and identify the type and size of weapons used and the number of blow sustained by the victim. Since with passage of time, anthropologist gains experience in examination of hundreds of remains and develop a very valuable skill and becomes familiar with delicate variations in the hard tissues such as bone and teeth. An anthropologist through years of training in anthropometry has an advantage over a medical person who gives more precise and definite anthropometric measurements through modern statistical techniques.

Analyzing of teeth remains help anthropologist to estimate how old the remains are, the diet that the human ate, analysis of overall health, and possibly tell about the human's cultural rituals. The measurable physical characteristics such as stature, head dimensions, and tooth diameters are determined partly by nongenetic factors such as environment, culture, and partly by genes. The property of heritability and transmissibility plays a major important role in the determination of physical characteristics of bone and teeth. The determination of head

height, frontal breadth, bigonial breadth, nose breadth, head breadth, facial height, bizygomatic breadth, head length, and nose height depends on the property of heritability explained by genetic factors. Maxillary and mandibular dental arch length, breadth, maxillary intermolar breadth, overjet, overbite, deciduous buccolingual, mesiodistal diameters, and permanent buccolingual, mesiodistal diameters are determined by genetic factors. The property of transmissibility explained by culture and genetic also plays a role in the determination of head circumferences, cusp numbers, and groove pattern of molars. Anthropologists have well-established knowledge on the anthropometric measurements of these characteristics which helps them to identify the culture, diet pattern, racial differentiation (Mongoloids, Negroids, Dravidians, and Australoids), and even ethnicity. Tooth mutilations, tooth chipping, tooth filing, tattooing, and tobacco habits explained by cultural and racial variations help in identification of the deceased individuals.

Anthropologist have skilled training in dealing with racial variation in human skeleton and dentition when compared to medical and dental surgeons. In India, >30 Universities run undergraduate and postgraduate courses in anthropology, only five Universities have introduced forensic anthropology at postgraduate level. Thus, there is a suggestion that forensic anthropology in dentistry has to be introduced in the postgraduate syllabus since they play a major role in medicolegal cases pertaining to jawbones, facial bones, and teeth.

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