

An Overview of Forensic Anthropology

Purva Mishra*

Department of Pharmacy, Forensic Science Section, University of Delhi, Delhi, India

Introduction

Application of anthropology's anatomical science and its different subfields, such as forensic taphonomy and forensic archaeology, in a judicial context is known as forensic anthropology. If a person is killed in a plane crash and their remains are charred, mangled, decomposed, or otherwise impossible to identify, a forensic anthropologist can help. In addition, forensic anthropologists play a crucial role in the analysis and recording of mass graves and genocide. Forensic anthropologists frequently testify in court as expert witnesses, along with forensic pathologists, forensic dentists, and homicide investigators. A forensic anthropologist may be able to estimate a person's age, sex, size, and race using physical clues found on a skeleton. Skeletal abnormalities can be used by forensic anthropologists to perhaps discover the cause of death, past trauma like broken bones or medical operations, as well as diseases like bone cancer. In addition to identifying the person's physical traits [1].

Description

The techniques for identifying a person from a skeleton rely on the historical contributions of different anthropologists and the examination of the variations in human skeletal structure. Estimates based on physical traits can be made by the gathering of thousands of specimens and the examination of differences within a group. These might be used to identify a group of remains. During the 20th century, forensic anthropology developed into a fully accepted forensic specialty, incorporating both professional anthropologists and several research organisations collecting information on decomposition and the impact it may have on the skeleton [2].

Modern uses

Within the forensic field, forensic anthropology is now a recognised discipline. When additional physical qualities that could be used to identify a body are no longer there, anthropologists are relied upon to examine remains and assist in identifying individuals from bones. To identify remains based on their skeletal traits, forensic anthropologists collaborate with forensic pathologists. Normal identification would be challenging, if not impossible, if the body had been devoured by scavengers or had been missing for a considerable amount of time. In order to be entered into missing person databases like that of the National Crime Information Center in the US or INTERPOL's yellow notice database, forensic anthropologists can offer physical characteristics of the person.

In addition to these tasks, forensic anthropologists frequently support the investigation of mass fatality and war crimes cases. Anthropologists have been tasked with assisting in the identification of victims of the 9/11 terrorist attacks, as well as victims of aircraft disasters like the USAir Flight 427 disaster and the Arrow Air Flight 1285 disaster, in which the flesh was either completely

burned off or severely mutilated, making conventional identification impossible. Additionally, anthropologists have aided in the identification of genocide victims in numerous nations, frequently years after the actual atrocity. The Rwandan genocide and the Srebrenica Genocide are two war crimes that anthropologists have assisted in examining. Organizations like the American Society of Forensic Anthropologists, the British Association for Forensic Anthropology, and the Forensic Anthropology Society of Europe continue to offer recommendations for advancing forensic anthropology and creating standards within the field [3].

History

The acceptance of anthropology as a separate scientific field and the development of physical anthropology led to the application of anthropology in the forensic examination of remains. In the early decades of the 20th century, anthropology, which had its roots in the United States, battled for acceptance as a valid discipline. Earnest Hooton established the discipline of physical anthropology and was the country's first physical anthropologist to work as a full-time professor. Along with the organization's founder Ale Hrdlika, he served on the American Association of Physical Anthropologists' founding committee. Early in the 20th century, students of Hooton established some of the earliest doctoral programmes in physical anthropology. Hooton supported criminal anthropology in addition to physical anthropology. Phrenology and physiognomy, which are now disregarded as pseudosciences, were once thought by criminal anthropologists to be able to correlate a person's behaviour with particular physical traits. Phrenology and physiognomy, which are now disregarded as pseudosciences, were once thought by criminal anthropologists to be able to correlate a person's behaviour with particular physical traits. The eugenics movement, which was prevalent at the time, gave rise to the use of criminal anthropology to attempt to explain specific criminal tendencies. Due to these concepts, skeletal variations were seriously measured, which eventually led to the creation of anthropometry and Alphonse Bertillon's Bertillon method of skeletal measuring. Anthropologists' understanding of the human skeleton and the various skeletal variations that can exist has been shaped by the examination of this data [4].

Methods

The understanding of osteology and the variations found in the human skeleton is one of the key techniques forensic anthropologists use to identify remains. Anthropologists are sometimes faced with determining a person's sex, stature, age, and ancestry throughout an investigation. Anthropologists must be aware of how individual variations in the human skeleton in order to accomplish this.

Determination of sex

Searching for distinctive sexual dimorphisms can help identify sex depending on which bones are present. The pelvis is very helpful in determining sex when it is available and, when correctly inspected, can achieve sex determination with a high degree of accuracy. Sex can be ascertained by looking at the pubic arch and where the sacrum is. Due to the fact that the pelvis is not always available, forensic anthropologists must be aware of other parts of the skeleton that differ in appearance between the sexes. Multiple sex-related indicators can be found in the skull as well. The temporal line, the eye sockets, the supraorbital ridge, the nuchal lines, and the mastoid process are specific landmarks on the skull. Male skulls often have more pronounced ridges and are thicker and bigger than female skulls. Due to the variations that can exist among members of the same sex, forensic anthropologists

*Address for Correspondence: Purva, Mishra, Department of Pharmacy, Forensic Science Section, University of Delhi, Delhi, India, E-mail: mishra_p@gmail.com

Copyright: © 2022 Mishra P. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 03 May, 2022, Manuscript No. jfr-22-69315; Editor assigned: 06 May, 2022, PreQC No. P-69315; Reviewed: 17 May, 2022, QC No. Q-69315; Revised: 23 May, 2022, Manuscript No. R-69315; Published: 30 May, 2022, DOI: 10.37421/2157-7145.2022.13.498.

must consider all available markers when determining sex. For instance, a female may have a pubic arch that is a little narrower than average. Because of this, anthropologists typically categorise sex as either male, maybe male, undetermined, maybe female, or female.

Determination of stature

Anthropologists use a set of formulas to estimate stature that have been created through time from the analysis of numerous bones from a wide variety of diverse regions and backgrounds. The measurement of the leg bones yields a range of possible values for stature, which is expressed in centimetres. The femur, tibia, and fibula are the three bones that are utilised. The humerus, ulna, and radius of the arm can be employed in addition to the bones of the leg. The formulae that are used to calculate stature rely on a variety of personal data. Before attempting to measure height, it is best to know sex, ancestry, and age.

Determination of age

Anthropologists use different methods to estimate an individual's age depending on whether they were an adult or a youngster. The teeth are typically examined in order to estimate a child's age that is under the age of 21. Children can be dated based on which growth plates are sealed in the absence of teeth. Around 16 or 17 years old for girls and 18 or 19 years old for boys, the tibia plate seals. The growth plate of the clavicle, the final bone to finish growing, is sealed at the age of 25. Additionally, anthropologists can count the bones if a whole skeleton is provided. While adults have 206 bones, children have a substantially higher number since their bones have not yet fused.

Determination of ancestry

The determination of a person's ancestry is often divided into the Caucasoid, Mongoloid, and Negroid historical groupings. However, when interancestral marriage rates rise and markers deteriorate, it is getting much more difficult to apply these categories. Due to its three fundamental shapes—hyperbolic, parabolic, and rounded—which correspond to the three historical ancestries of Negroid, Caucasoid, and Mongoloid, respectively—the maxilla is frequently used by anthropologists to identify a person's ancestry. The

zygomatic arch and the nasal opening have also been used to hone in on potential ancestry, in addition to the maxilla [5].

Conclusion

The understanding of osteology and the variations found in the human skeleton is one of the key techniques forensic anthropologists use to identify remains. Anthropologists are sometimes faced with determining a person's sex, stature, age, and ancestry throughout an investigation. Anthropologists must be aware of how individual variations in the human skeleton in order to accomplish this. Anthropologists' understanding of the human skeleton and the various skeletal variations that can exist has been shaped by the examination of this data. Anthropology and the Forensic Anthropology Society of Europe continue to offer recommendations for advancing forensic anthropology and creating standards within the field.

Conflict of Interest

None.

References

1. Shapiro, Helen L. "Earnest Albert Hooton 1887–1954." *Am Anthropol* 56 (1954): 1081-1084.
2. Spencer, Frank. "The rise of academic physical anthropology in the United States (1880–1980): A historical overview." *Am J Phys Anthropol* 56 (1981): 353-364.
3. Snow, Clyde Collins. "Forensic anthropology." *Annu Rev Anthropol* (1982): 97-131.
4. Brown, Holly A., Lawrence E. Gibson, Ramon M. Pujol, and John A. Lust, et al. "Primary follicular mucinosis: Long-term follow-up of patients younger than 40 years with and without clonal T-cell receptor gene rearrangement." *J Am Acad Dermatol* 47 (2002): 856-862.
5. Buikstra, Jane E., Jason L. King, and Kenneth C. Nystrom. "Forensic Anthropology and Bioarchaeology in the American Anthropologist Rare but Exquisite Gems." *Am Anthropol* 5 (2003): 38-52.

How to cite this article: Mishra, Purva. "An Overview of Forensic Anthropology." *J Forensic Res* 13 (2022): 498