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Exhumed Remnants of human skeleton trails to a story of homicide -A case of exhumation

Basant Lal Sirohiwal, Ashish Tyagi, P. K. Paliwal, Luv Sharma

Professor, Dept. of Forensic Medicine, Pt. B. D. Sharma, Postgraduate Institute of Medical Sciences, Rohtak, Haryana, India
Resident, Dept. of Forensic Medicine, Pt. B. D. Sharma, Postgraduate Institute of Medical Sciences, Rohtak, Haryana, India
Senior Professor & Head, Dept. of Forensic Medicine, Pt. B. D. Sharma, Postgraduate Institute of Medical Sciences, Rohtak, Haryana, India
Contact: Basant Lal Sirohiwal · drbasantsri@gmail.com

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ABSTRACT

Exhumation is carried out on the orders of competent authorities for legal purposes to determine the cause, manner and nature of death, time since death and sometimes to establish identity of the person. This may be carried out in both civil and criminal cases. The exhumation of the case in hand was carried out on the identification of the burial spot by the criminals after about 6 years of his death and buried in a desolate place to hide the crime. The remnants of bones recovered were almost dry and without remnants of soft tissues and partly smudged with easily separable sand during post-mortem examination. The pathological analysis of dry bones in a forensic context is always a difficult matter, even for the most experienced specialist. Lack of soft tissues is an obstacle for the research because soft tissues provide information that is normally not shown in the dry skeleton. Therefore, it presents limitations that may preclude final and definite conclusions. Absence of sharp instrument stigmata on the skeleton does not mean that sharp injury was not the cause of death; many fatal wounds miss the skeleton altogether.[1] The examination of these remnants of bones was showing sharp cuts at different parts and these could have been the cause of death except those present on the soft tissues.

Keywords: exhumation, sharp cut over bones, skeleton, homicide, sharp weapon

Introduction

Associating an injury to the skeleton with the time of death and causative agent is also the most important consideration in the forensic evaluation of trauma. Whether a lesion is a cut mark, or blunt force injury, a fracture or a firearm impact, it is critical to know whether it occurred prior to, around the time or after death. It is more likely that skeletonised remains cases will provide clue to the manner of death rather than cause of death. The data available to forensic anthropologists rarely allows for the reconstruction of the physiological events that causes death. While one cannot, with any assurance demonstrate what exactly initiates a chain of physiological events that resulted in the termination of life; it is often possible to discover evidence that death was by homicide, suicide, accident or was natural.[2]

In the case in hand the marks of sharp cut injuries were demonstrated on the bones covering the vital parts of the body; that might cause damage to the structures within its way during life by some-one-else and resulting in to death except the one that might have been present over the soft tissues.

History

An exhumed dry clean (without any remnants of soft tissues) skeleton of a known 35 yrs old male person was brought in the month of February 2013 to the department of Forensic Medicine, PGIMS Rohtak , Haryana, India after being referred from a primary care hospital. The dead body was alleged to have been buried about 6yrs ago. The story goes like this that a family of three constituting mother, father and a male child of 6 years left their home town in search of livelihood and start living in a nearby town in hired house. In the meantime, two male persons known to them, being of their native village, started visiting in their house very frequently. The lady was having extramarital relations with one of them and because of this the husband and wife had regular fights. One night, the alleged accused along with one of his accomplices and his lover (victim's wife) killed the deceased and buried the body in far off empty land. The only witness to the entire incident was the 6 years old son of the victim, who was under the full control of his mother. While they were killing his father, he tried to make a noise but he was locked in a room. On next day the lover along with the lady & her son left the town and start living in another town in a hired house. On asking by son about the father, the mother used to reply that he had gone somewhere and will come after sometime. She used to ignore about any talk of the father. He also stated that he tried many times to go to his native village but every time his mother did not allow and forced him to stay with her. On getting an opportunity, he run away and reached his native town where he told entire story to his relatives. He told that his father was killed about 6 years back and buried somewhere. On this the police took action and caught the accused. On their verification of the site the body remnants in the form of skeleton were dig out and brought to this department for post-mortem examination.

Autopsy Findings

A sealed white colour plastic sack was received which was said to contain bundle of bones in it. On opening the sack almost dry bones were recovered along with grey colour underwear entangled in them. The underwear was smudged with mud and was torn in the back over the right side area and along with a sharp cut present over it in the left lower back region of the underwear measuring 7cm in length which was continued upwards with the torn portion (Fig-1).



Figure 1. Showing sharp cut over the underwear

Examination of skeleton:-

All the bones were dry soiled with mud and soil, some friable, having wet bony like smell and were devoid of soft tissues and ligaments; and these were segregated and arranged in anatomical order by assembling and reconstructing the bones in to a skeleton. All the bones were of human & with typical male characteristics. In total there were around 80 bones which were recovered, of which 71 were identifiable and rest of the bones (9) were fractured fragments of different bones. The configuration of all the bones was maintained and intact except the pelvis which was friable and showing decay effect in the form of excoriations and exposed internal structures.

Examination of individual bone

Skull: - The mastoid process of the skull is of typically male. The cranial sutures over the outer table of the skull were not obliterated but they were on the inner table of the skull. Basisphenoid and basi-occiput were fused. Temporal sutures over the skull were somewhat separated.

Mandible: - the angle of the mandible was everted and muscular markings were appreciable. The mental foramen was found in the middle. Both coronoid process of the mandible were broken.

Dental examination: - both central incisors in upper jaw were missing along with left upper lateral incisor; 3rd molar was not erupted in both sides of lower jaw. All teeth showed moderate grinding with non-exposure of pulp and cusps were identifiable with appreciable mild yellowish staining of teeth.

Vertebrae: - there were 6 cervical vertebrae, 12 thoracic and 4 lumbar vertebrae were segregated which were loose and soiled with mud. Lumbar vertebrae were showing grade two lipping.

Pelvis: - pelvic bone was particularly friable and was found in 3 pieces; 2 iliac and one ischium and pubis part. Sacrum and coccyx were missing. One left pelvic bone and left iliac bone with sciatic notch which is of typical male with iliac crest fused. Right iliac bone was broken in multiple pieces however; sciatic notch was appreciable which is broader and wider typically male. Pubic symphyseal surface was smooth with posterior border maintains as compared to anterior.

Bones of Upper Limbs: - 2 humerus, 2 radius and 2 ulnas along with 4 metacarpals were found. Left ulna was fractured in two pieces in mid-shaft with whitish looking exposed end. Right ulna in the lower 1/3rd region was missing along with white exposed fractured parts appreciable. Rest of all the bones were intact.

Bones of Chest :- there was a pair of clavicles whose medial ends were fused, both scapulas, body of sternum found fused but xiphisternum found loose separately, manubrium was missing and 9 pair of ribs were present. 1st and 2nd pair of ribs was identifiable separately. 2 or 3 ribs were also found to be fractured in the middle.

Bones of Lower Limbs: - Right femur proximal half was missing and left femur was of typical male character. Both sides' tibia and fibulas were present. Left fibula in the lower 1/3rd area was fractured with whitish looking exposed part and rest lower part missing.

Tarsals bones were also present, along with one calcaneum and one talus. Rest of the bones were missing.

Injuries over the bones:-

1. An oblique sharp cut of size 6x0.2 cm present over left parieto-temporal area of skull in coronal plane; 7cm left to midline and 10 cm above external acoustic meatus. The direction of the cut was anterior to posterior. It has bevelled margins with anterior edge exposed as compared to posterior edge. Both the angles of the wound were acute. It was present only on the outer table of the skull. Effusion of blood was appreciated over the sharp cut margins. (fig-2).



Figure 2. Sharp cut with beveled edge on front aspect of left temporo-parietal region of skull



Figure 3. Chipped sharp cut with posterior beveled edge over right body of mandible



Figure 4. Appreciable Sharp cut over posterior tubercle of atlas



Figure 5. Sharp cut with chipping & tailing effect over body of first Lumber vertebra

Based on the anatomical knowledge of human bones, these were identified as to be of a human being. The cause of death in this skeletonised body of a middle aged male individual was pronounced as due to cumulative effects of injuries to the head, neck and abdomen via injury no. 1,2,3 & 4 respectively and their complications resulting into damaging the structures within coming on their way up to the bones consequently upon impact of heavy sharp cutting weapon. All the injuries over the head, neck and abdomen as described were collectively or individually could have resulted into death. All the injuries were ante-mortem caused by heavy sharp cutting weapon by some-one-else. Subsequently a weapon (fig-6) was brought to the authors for examination and opinion. This weapon was having characteristics of curved front part with sharp back edge commonly used in the farming purposes. Hence, wherever the main part of the blade struck it was straight as observed on skull & mandible (fig-2,3) and the part struck was from the front of this weapon was producing a deep wound with chipping and tailing effects as seen in first lumber vertebra (fig-5).



Figure 6. Alleged weapon of offence

Discussion

In India, the Mohammedans, the Christians and the Hindu bury their dead, while majority of the Hindu cremate the dead bodies by fire. However, to conceal the crime of murder, a Hindu may also bury the dead body [3] as was done in the instant case. As for as post-mortem interval is concerned, in practice, it is usually impossible to estimate the interval from the autopsy findings in these cases with any degree of accuracy.[4] The cause of death can only be defined if the injury were appreciated over the bones in the form of incised or the lacerated wounds. The nature of the cut depends on whether the weapon has: (i) passed cleanly through the bone; (ii) come in contact with it and glanced off; (iii) made contact and produced a deeper wound (sometimes removing a roundel of bone which may traverse both outer and inner tables or just penetrate the diploe); or (iv) merely created an incised wound, sometimes known as a skip lesion. The soft tissues would have held the bones together at the time of internment, only for them to fall apart in the burial environment. So there may be taphonomic variability with colour differences between separated pieces. The first category of injury, where the blade has passed cleanly through bone, will produce a wound with straight, clean-cut edges which may be almost perpendicular with the bone surface. These lesions can be seen clearly on the cranium and occasionally on the postcranial bones. There may also be terminal fractures at the end of a cranial wound. The second category will produce a gutter fracture where the sword has grazed the bone. By contrast, in the third scenario the diagnostic criteria are more complicated and consist of:

• A linear wound with a well-defined clean edge

• A flat, smooth, polished cut surface on the oblique side of the injury

• Flaking and roughening on the acute side

• The possibility of terminal fractures

Finally, incised wounds will create a linear cut which may have small flakes of bone chipped off its edges.[5] The injuries described in the instant case by the weapon under question are almost indicating the identical pattern as per these observations. The cause of death as pronounced in the instant case might have been given in a different way by some researchers as if the injuries were caused during life.[3] We have observed the colour change over the cut surfaces of the bones, hence, the injuries were conclusively ante-mortem. However, the definite time since death could not be given in this case as the bones were dry and clean without any odour and the facilities regarding bone histo-chemistry, carbon dating and mineral content analysis were not carried out due to non-availability.

Conclusion

The pronouncement of cause & manner of death in exhumed bodies may not be possible, if, no bony injury is observed and only soft tissues and organs involved are missing after maceration of the same in buried bodies. Therefore, from this case we want to convey a message that the exhumed bones having cuts on them without soft tissues even speak loudly that what has happened to the body during life related to the cause & manner of death. .

References

1. Klepinger LL. Fundamentals of Forensic Anthropology. New Jersey: John Wiley & Sons; 2006; p. 114-16.
2. Sauer NJ. The timing of injuries and manner of death: distinguishing among antemortem, perimortem and postmortem trauma. In: Reichs KJ, editor. Forensic osteology: advances in the identification of human remains. 2nd ed, Springfield: Charles C. Thomas, 1998; 321-32.
3. Mathiharan K, Kannan K. A textbook of Medical Jurisprudence and Toxicology. 24th ed. Nagpur: Lexis Nexis Butterworths Wadhwa; 2012; p. 335.
4. Gordon I, Shapiro HA. Forensic Medicine-A guide to principles. 3rd ed. London: Churchill Livingstone; 1988; p. 59.
5. Brickley M, McKinley IJ. Guidelines to the standard for recording human remains. Institute of Field Archaeologists; 2006; p.41-3.