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Lăcrămioara BĂLAN

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THE ARTEFACTS AT FORENSIC AUTOPSY

Lăcrămioara BĂLAN¹

Abstract

Artefact may be regarded as any change caused or feature introduced in the natural state of the body that is likely to be misinterpreted at autopsy. Such artefact may be introduced before death, at the time of death or after the death and, therefore, may accordingly be labelled as therapeutic artefacts, agonal artefacts and postmortem artefacts.

Medicolegal Autopsy or Forensic Autopsy is learnt only through extensive practical experience, and the doctor conducting the autopsy carries great responsibility over his shoulders.

Keywords:

Artefact; identification; therapeutic artefacts; agonal artefacts and postmortem artefacts;

I. Introduction

Artefact may be regarded as any change caused or feature introduced in the natural state of the body that is likely to be misinterpreted at autopsy. Such artefact may be introduced before death, at the time of death or after the death and, therefore, may accordingly be labelled as therapeutic artefacts, agonal artefacts and postmortem artefacts.

II. Therapeutic artefacts

The task of performing autopsy may sometimes become difficult in cases where the victim has sustained serious injuries and has survived for a fairly long time, undergoing surgical and other treatment; these may affect the interpretation of findings at the time of conducting autopsy, if the autopsy surgeon is not conversant with their origin and significance.

This focuses the necessity of going through all the records of the antemortem treatment and if needed, a discussion with the doctors who attended the victim during hospitalisation (Mallett et al., 2014). The following are a few examples:

¹ Lecturer PhD, "Ștefan cel Mare" University of Suceava, Faculty of Law and Administrative Sciences, Suceava, Romania, lacramioara.balan@fdsa.usv.ro

_ Vigorous external cardiac massage may result in fractures of the ribs and sternum.

_ Injection marks against the cardiac region and ring-like bruising caused by a defibrillator may be the other sources of confusion.

_ Administration of fluids or multiple blood transfusions may introduce changes in the blood alcohol concentration or concentrations of other toxic agents.

_ Shape and size of the injury/injuries may be altered by the surgical intervention.

The appearance of entrance and/or exit wounds may be distorted by surgical interference or during washing/cleaning the wounds. Bullet or pellet(s) may drop out unnoticed while removing clothing in the Emergency Wing. Similarly, it may happen in the operating rooms too.

_ Changes intervene in the injuries with the passage of time in the form of healing or becoming septic, etc.

III. Agonal artefacts

Absence of appreciable haemorrhage does not necessarily indicate its postmortem origin nor does the presence of extravasated blood into the tissues always suggest its antemortem origin. During the terminal moments of life, the victim may pass rapidly into vascular collapse or shock that may prevent any significant bleeding to occur. An individual may collapse and die along the roadside and may subsequently be run over by some vehicle, leading on to collection of blood in the body cavities and some into the tissues too.

IV. Postmortem artefacts

Postmortem artefacts imply any alteration, modification, addition or subtraction of some postmortem features due to certain factors originating after death. These may be classified as following:

- _ Artefacts induced by transportation/storage/ handling, etc.
- _ Artefacts induced by embalming, decomposition, etc.
- _ Artefacts induced by predators or deliberate mutilation/dismemberment by the criminals.
- _ Artefacts induced by improper autopsy procedures.

Artefacts Induced by Transportation/Storage/Handling, etc.

These are as follows:

_ Postmortem lividity is usually purplish in appearance. However, this lividity appears pinkish in refrigerated bodies or bodies exposed to cold environment.

- _ Postmortem collection of blood in the occipital region due to bumping of head.
- _ Protruding areas of the body may get abraded due to dragging of the body.
- _ Rigor mortis may be broken during lifting or handling of the bodies giving wrong clues towards time since death (Mallett et al., 2014).
- _ Rarely, fractures of the long bones may be caused particularly in debilitated, elderly dead bodies with osteoporotic changes.
- _ During transportation, dead body may be contaminated with dirt, soil, grease, etc., which may give wrong impression about the place of occurrence of death.
- _ Tearing of the clothing during transportation may appear to be due to some scuffle during life.
- _ Attempt to remove ornaments from the body parts like nose, ears, neck, etc., may cause injury to these parts and may send wrong impressions.

Artefacts Induced by Embalming, Decomposition, etc.

These are as follows:

- _ The embalming technician may pass trocar in any of the wounds already present upon the body or may make a fresh cut. Embalming fluid used may pose problems in chemical analysis of viscera.
- _ Decomposition of the body may lead to production of most common artefacts, i.e.:
 - _ Bloating, discolouration and blistering of a decomposing body may not be mistaken for disease or injury. Dark bluish areas of discolouration must be distinguished from bruising.
 - _ Distension of parts of the body having loose tissues like lips, eyelids, breasts, penile and scrotal regions and protrusions of tongue may impart false sense of obesity.
 - _ Expulsion of blood-tinged fluid from the mouth and nose may be mistaken as bleeding originating during life.
 - _ If the deceased were wearing tight clothing or having a neck-tie, a groove may appear around the neck and this along with bulging of the eyes and protrusion of the tongue may be mistaken for strangulation
 - _ Fissures or splits formed in the skin during decomposition may simulate incisions or lacerations.
 - _ Expulsion of semen or vaginal discharge due to pressure of putrefying gases may wrongly suggest involvement of sexual activities with the cause of death.
 - _ Marked bluish discolouration of the loops of intestines, especially in the pelvic cavity, may not be mistaken for infarcted bowel (Mallett et al., 2014).

_ Autolytic rupture of stomach can occur postmortem with release of the stomach contents into the peritoneal cavity.

_ Pancreas too may undergo autolysis due to proteolytic enzymes within it. This autolysed organ may appear haemorrhagic and mistaken for pancreatitis. However, histology will be helpful in resolving the issue.

***Artefacts Induced by Predators or Deliberate
Mutilation/Dismemberment by the Criminals***

Common terrestrial creatures attacking the dead body in and around the mortuary are rats, rodents, ants etc. Ants and insects mostly attack the exposed parts and moist areas such as face, arms, genitals, groins and axilla, etc.

Rats, cats and dogs usually destroy the soft tissues of the exposed parts. All these are devoid of evidence of haemorrhage and vital reaction and their edges appear nibbled (Swanson et al., 2012).

Bodies recovered from open space may be attacked by dogs, cats, vultures or another animals, and the bodies recovered from water may show gnawing by fish, crabs and other aquatic animals. Flies, maggots, larvae, etc. may alter the wounds.

Sometimes, mutilation or dismemberment of the corpse may be done by the criminals for easy disposal and removal from the scene of crime. Injuries may also be inflicted after death merely to mislead investigations (Geberth, 2012).

Often, persons may be killed and thrown in water or the dead body may be set on fire.

Occasionally, the victim may be poisoned and hanged after death and so on.

Artefacts Induced by Improper Autopsy Procedures

_ In usual practice, the vault of the skull is sawn and then removed gently by inserting and twisting the chisel at various places through the gap generated by sawing. Any vigorous sawing or using chisel and hammer may result in extension of the existing fractures, or fresh fractures may be caused.

_ In deaths due to compression of the neck, it is preferable to open the skull first. The draining out of the blood from the neck vessels due to prior removal of skull and brain provides a clearer view for the study of the neck structures and will avoid occurrence of congestive artefactual haemorrhages in the neck structures as cautioned by Prinsloo and Gordon.

_ When the neck structures are pulled forcefully or improperly, air may enter the vessels of the neck or there may be seepage of blood into the tissues or there may occur fracture of the hyoid bone especially in the elderly.

_ During removal of the sternum, damage to the heart or internal mammary vessels may lead to seepage of blood in the pleural or pericardial cavities.

_ While abdomen or peritoneum are being cut open, coils of intestines may get involved.

_ Improper pulling apart of the liver may cause tears in the diaphragm and denudation and laceration of the bare area of the liver.

_ Collection of viscera in a single container or use of contaminated dirty bottles/jars or preservatives may result in wrong conclusions for visceral analysis.

Heat Effects

When the body is exposed to intense heat, the skin becomes tense, leathery, hard and frequently exhibits splits that may be mistaken for wounds. Heat fractures may also be encountered.

In conflagrations, when the head has been exposed to intense heat, scalp may show splits, and the skull cap may present fissured fractures that may be mistaken for fractures due to trauma. Furthermore, 'heat haematoma' within the burnt skull can resemble an extradural haemorrhage of antemortem origin (Geberth, 2012).

The frothy brown appearance of the false clot along with heating effects upon the adjacent brain helps in differentiation.

Medico-legal Autopsy or Forensic Autopsy is learnt only through extensive practical experience, and the doctor conducting the autopsy carries great responsibility over his shoulders. It is obvious that if he is unable to furnish proper interpretation of the findings, the pangs of justice will be disturbed and, therefore, it is imperative that all unusual findings must be meticulously examined and photographed and if need be, some experienced, better qualified colleague may be approached there and then since, as stated earlier, a poor opinion is worse than no opinion at all. The doctor should learn to draw conclusions logically and rationally instead of forming hasty judgement. Further, if he misinterprets the findings, he will have to face rough time in the court during the cross-examination, if the defence counsel incidentally being aware of these pitfalls attempts to discredit the evidence.

BIBLIOGRAPHY

- Geberth, V. J. (2012). *Practical Homicide Investigation*. CRC Press. pp. 325, 327.
- Harris, H. A., & Lee, H. C. (2019). *Introduction to forensics & criminalistics* (2nd ed.). CRC Press. pp. 85-101.
- Mallett, X., Blythe, T., & Berry, R. (2014). *Advances in Forensic Human*. CRC Press/Taylor & Francis Group. pp. 30, 41, 92.
- Swanson, C., Chamelin, N., Territo, L., & Taylor, R. W. (2012). *Criminal Investigation*. The McGraw-Hill Companies. pp. 235-268.