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THE IMPORTANCE OF SIGNS OF DEATH

Mekeres Gabriel Mihai*, Voiță Gheorghe Florin, Pop Nicolae Ovidiu***, Boșca Claudia****, Voiță Nuțu Cristian *****

*, **,***, ****,***** University of Oradea, Faculty of Medicine and Pharmacy,
** Correspondent author: University of Oradea, Faculty of Medicine and Pharmacy, Department of Dental Medicine. Oradea- Romania, 1 Universității St., 410087
Oradea, Romania, e-mail: voita_florin@yahoo.com

Abstract

The forensic examination of the corpses is one of the most important aspects of forensic and legal practice. The cessation of vital functions is accompanied by the occurrence of cadaveric phenomena, which have a great medical-legal importance in establishing the reality of death and the date of death. The forensic autopsy seeks to determine the causes and mechanism of death regardless of the degree of change in the body, but early autopsy is important because some information may be lost if the body falls into autolysis or decompose. Forensic necropsy is a means of collecting scientific evidence of value, so it must be done correctly, once and from the beginning. Knowing the cadaveric biochemical and morphological changes and their evolution over time allows us to specify the date to which a person has died. Establishing the date is of particular judicial importance because it solves different versions of the investigation.

Key words: forensic examination, signs of death, legal medicine.

INTRODUCTION

The signs of a real death consists of physicochemical changes of the body due to the cessation of vital functions and the action of the environmental factors on it. These are the signs of early death (up to 24 hours) and late (after 24 hours). (Beliș, 1995)

The early ones are livor mortis, rigor mortis, body cooling, dehydration, and fall-down autolysis; the signs of late deadly death are destructive: putrefaction, destruction of the body by animals, insects and conservative: natural by: freezing, lignification, mummification, adiposeal, mineralization and artificial embalming. (Goff, 2009)

MATERIAL AND METHOD

The livor mortis are formed by the accumulation of cranial blood under the action of gravity, under conditions of cessation of movement. The clinical significance of the recognition of cadavers is to distinguish them from bruises - primary traumatic lesions, not only located on a non-bending

section, and have haemorrhagic infiltration in the tissue thickness. (Curcă, 2009) (Etievent, 2014)

Rigor mortis is established by the decrease of adenosine triphosphate up to the disappearance, due to lack of synthesis and increasing lactic acid accumulation, therefore actin and myosin miofilaments acquire a gel state that causes a plastic contraction state, improper for new muscle contractions. (Sandelowski, 1993) (Walt, 1999)

Cooling the body is the irreversible stopping of movement and breathing, which leads to the cessation of the metabolism of the body as a whole, while the tissues and organs survive for a limited time. The body will equalize its temperature with the one in the environment present. (Dermengiu, 2011) (Kaliszan, 2009)

Cadaveric dehydration is produced by loss of water by evaporation, the process is more evident in the eye, mucous membranes (lips, scrotum, labia), corrugated tears or wrinkle margins. The clinical significance of recognizing this signs of death is to distinguish it from a postvital excision, with free skin, without hemorrhagic infiltration. (Farrugia, 2016) (Campobasso, 2009)

Cadaveric autolysis is both intravital and postvital. It is an enzyme-induced self-transduction process that is triggered by the activation of lysosomal enzymes and takes place without energy and abdominal consumption. In the order of appearance in the tissues, we meet it in the blood as hemolysis, in adrenal glands that liquefies, in the pancreas that is red colored, the gastric mucosa takes a reddish-violet appearance, with non-vital perforations without peritoneal reaction. (Dragomirescu, 1996) (Escamez, 2014)

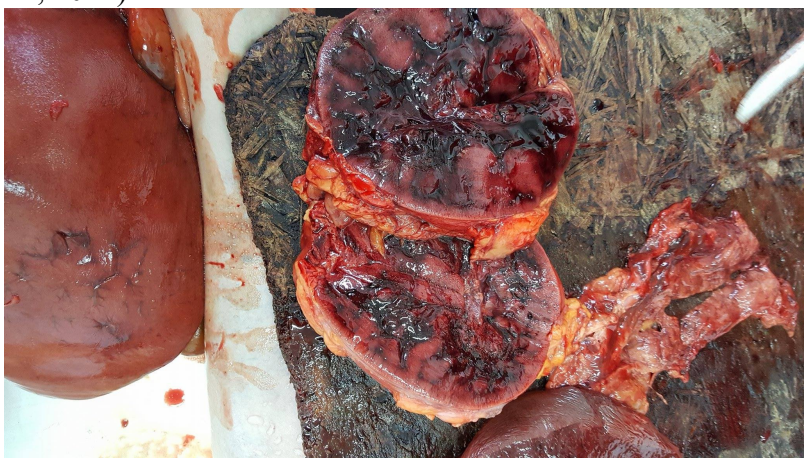

Fig. 1. Liver, kidney, pancreas with autholitic modification

Putrefaction is a destructive process, both enzymatic and bacterial, which can be triggered 24 hours after death. It can be seen on the corpse:

green discoloration of abdomen, the postum circulation, the exteriorization of the fluids through the natural orifices, skeletal, etc. The saprophyte microbial flora multiplies abundantly, invades the area of the large intestine, the healing paths through continuity and through the blood vessels. (Mihalache, 2016) (Vass, 2001)

Another type of late signs of death is the destruction of the body through necrophagous and necrophilous insects and by omnivorous animals. (Mekeres, 2016)

Mummification occurs through rapid dehydration of the corpse left in air streams, in dry places, high heat. (Scripcaru, 1983)

Lignification occurs when the body is stored in tannic and humic acid medium. (Tan, 2014)

RESULTS AND DISCUSSION

The forensic autopsy is aimed to determine the type of death, its medical cause, the agent that has produced bodily injuries, the circumstances in which death and the causal link between established and deadly injuries have occurred. (Dermengiu D. , 2015) (Mekereș, 2016)

The signs of real death are described in each report of forensic expertise. Differential diagnosis between cadaveric lividity is done by the signs of bruising and scrubbing of the tissue with water jets, in the case of ecchymosis the clot in the tissues cannot be removed while the lits are washed. Cadaveric lits can give useful information, for example, red ones in hydrogen cyanide poisoning, carbon monoxide intoxication. (Belis, 1990)

Cadaveric rigidity is important to determine the time elapsed since death, but it is specific to certain causes of death, such as cold death. (Panaitescu, 1984)

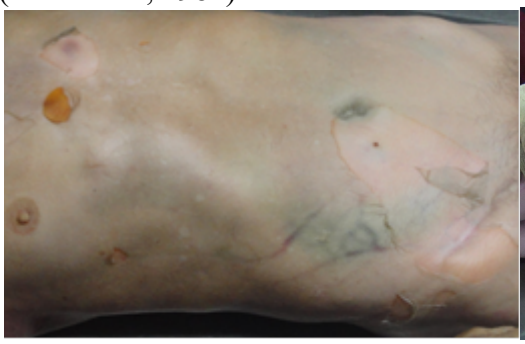

Fig. 2. Green discoloration of abdomen

Fig.3. Livor mortis

CONCLUSIONS

In forensic practice, autopsy should be done early, before the tissues undergoes changes in autolysis and putrefaction.

Signs of real death must be known by doctors to determine whether a person is dead or is in brain death.

By corroborating the signs of real death with the survey data, the forensic physician can differentiate traumatic injuries from those produced postmortem, may specify the date of death, the position of the corpse, and direct the cause of death.

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