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CASE SPECIFIC AUTOPSY PROCESS OF CORPSES PULLED OUT OF WATER

Doruk Yaylak[1], Büşra Oflaz[1], Ahmet Yılmaz[2]
[1] Trakya University Faculty of Medicine, Edirne, TURKEY
[2] Department of Forensic Medicine, Trakya University Faculty of Medicine, Edirne, TURKEY

ABSTRACT

Introduction: Our aim is to state the significant aspects of autopsy which is performed in order to accurately identify corpses pulled out of water and to determine the cause of death.

Depending on the time spent in the water, various traumatic alterations occur on the corpses pulled out of water. Independent of the cause of death, these alterations that can be named as artifacts, don't contribute to the determination of the cause of death but rather with the loss of evidence they induce, they greatly detriment the process of reaching a a diagnosis. As a routine, standard procedures cannot be applied to corpses that are decomposed and pulled out of water, different methods need to be followed.

One of the most significant aspects is that to find out the whether the cause of death is drowning or any other reason.

Case Report: A corpse of a male, greatly decomposed, found in the coastal region of Demirköy (Kırklareli) in January 2001, has been sent to our faculty for autopsy. It has been determined that the corpse is 178cm tall, soft tissues have been greatly decomposed except the chest-wall fully covered with fine sea sand and a small amount of skin with hair, and the skeleton has surfaced to a great extent. All the necessary examinations have been carried out on the highly decomposed corpse, the identity and the cause of death have been endeavored to be revealed by applying the method to be followed in such cases.

Conclusion: In the case we present, the examinations executed on the corpse partially skeletonized and the tissue sample identification procedures have proven that this corpse is not the lost member of at least a family. Identification of cases beyond recegnition in the events with several deaths as a result of exhumation of mass graves, plane crashes and natural disasters etc is possible with the systematic approach of forensic medicine and in the light of its accuracy.

Key Words: Corpses, autopsies, identification

INTRODUCTION

Our aim is to state the significant aspects of autopsy which is performed in order to accurately identify corpses pulled out of water and to determine the cause of death.

Depending on the time spent in the water, various traumatic alterations occur on the corpses pulled out of water. Independent of the cause of death, these alterations that can be named as artefacts, don't contribute to the determination of the cause of death but rather with the loss of evidence they induce, they greatly detriment the process of reaching a a diagnosis (1,2).

Procedures such as;
•Identification,
•Determination of the indications of death,
•Cause of death and the research of its origin,
in the forensic cases, cannot be applied to corpses pulled out of water as usual.

In these cases, depending on the time spent in water, the identification procedures become much harder with the obstruction of fingerprinting as a result of the swelling of the waterlogged epidermis (washer-woman's skin) and many difficulties are faced in the determination of cause of death due to the cumulation of vairous substances existing in the sea on the tissues and the loss of vital findings due to the wash away effect of water (1).

DNA samples obtained from the dependable, relatively remaining solid, tissues must be examined for identification in these cases, and if possible, the antemor-

Adress for Correspondence: Doruk Yaylak, Trakya University School of Medicine, Edirne, Turkey - e-mail: dorukyaylak@ymail.com

tem dental records of the potential individual should be compared with the dental anatomy of the autopsy.

The first and most important step is to find out whether the death was caused by drowning in water or by any other causes when determining the cause of death (3).

Here:
•Autopsy findings (detailed internal and external examination with laboratory methods)
•Crime scene investigation findings (the conditions following death and the process of extraction from water)

Depending on the time spent in the water, saponification and marks of death as a result of hypothermia are specific of the corpses pulled out of water. Only the traumatic marks found on the examinable tissues may indicate a cause of death different from drowning.

Drowning in water is an anoxic type of death in terms of the mechanism. The water which fills up the respiratory tract causes respiration to stop. It occurs more frequently in crowds near the sea all around the world and approximately half a million people die as a result of drowning in water every year. Young male adults constitute the most of these cases in our country (3).

In a case of drowning in water, the situation can be identified via the formation of white mushroom-like foam around the mouth and nose, which indicates that the person who was submerged alive in the water during active respiration movements drowned via aspiration of water. Such cases can also be identified via the bleeding areas in scalene, pectoral and sternocleidomastoid muscles due to violent respiration movements during drowning (1,4).

The condition of the lungs present rather important findings in cases of drowning in water. In cases of drowning in water, as the extreme enlargement of the lungs in volume due to liquid aspiration, gain of a hyperemic and swollen look can be observed macroscopically, the alveolar dilation the observed after the microscopic examination of the samples obtained can be evaluated in favor of drowning in water. Another place to be observed is the petechial haemorrhage in the conjunctiva which is characteristic of asphyxial deaths (1,4).

Diatom examination is another method that is frequently being used and gaining importance nowadays in cases of drowning in water. Diatoms which are a major subgroup of planktons, are present more or less in every kind of water. Diatoms which enter the body with the liquid that is aspirated while drowning are diffused into various tissues. Comparison of the diatom samples that are taken from the tissues of the body to the diatoms obtained from the water samples of the environment are considered as useful for identification (1).

When blood samples obtained from both cardiac cavities of the cases suspected to have drowned in water are compared, strontium test is quite assistive in reaching a diagnosis, but it hasn't yet become a routine, it is still an experimental method.

CASE PRESENTATION

A corpse of a male, greatly decomposed, found in the coastal region of Demirköy (Kırklareli) in January 2001, has been sent to our faculty for autopsy.

It has been determined that the corpse is 178cm tall, soft tissues have been greatly decomposed except the chest-wall fully covered with fine sea sand and a small amount of skin with hair, and the skeleton has surfaced to a great extent.

The soft tissues of the neck and the chest-wall have been observed to have relatively been conserved due to the saponification necrosis.

No fractures or similar traumatic findings were observed in the skull, cervical vertabrae, hyoid, thyroid cartilage and any other bone in the body.

Little amount of liquified tissue residuals have been observed when the skull was opened. Small pieces from the lungs in the chest-wall and the heart, few hairs with follicles and a fingertip with a nail have been submitted to the office of the attorney general for systematic toxicity examination. However, no lung sample conve-

nient for microscopic examination could be obtained as the destruction of intrathoracic organs was extensive.

The report was finalized by stating that the extensive decomposing of the corpse would prevent the identification of the cause of death and that an evaluation could be made if the result of the toxicity examination of the pieces obtained from the corpse turns out to be positive. It was also added that because there was no evidence of trauma to prove that this is not a drowning case, the cause of death is drowning in water.

The procuremenet of the attachment of the dental strcuture of the person marked on the orthodontic scale to the report was carried out with a dentist employed at the medicosocial.

A while later, the toxicity result of the corpse burried by the municipality in a designated parcel as there was no claim made, turned out to be negative. 2 years after the date of autopsy, DNA samples were requested by to the office of the attorney general with regard to the two applications; one of which was made by the Interpol Turkey Desk and the other being made from a village of Kırklareli, for comparison with the missing reports containing medical identity information. A ring cut out from the femur particle, a molar tooth with its root, 2-3 bone costa taken from the corpse whose grave was reopened have been submitted to the office of the attorney general to be sent to the Forensic Medicine Institute for DNA comparison.

Following the examination, it was understood that the DNA didn't match with the DNA of the application made from Kırklareli, but no information could be obtained regarding the application made from Romania.

DISCUSSION

Applications of forensic medicine can provide beneficial information to the judicial system regarding the dead and extensively decomposed and unidentified corpses as well as the information regarding the living. In the case presented, the examination and the efforts of tissue sampling (DNA) efforts executed on the corpse partially skeletonized, proved to a family that the their missing person is not this corpse. Identification of cases beyond recegnition in the events with several deaths as a result of exhumation of mass graves, plane crashes and natural disasters etc is possible with the systematic approach of forensic medicine and in the light of its accuracy.

Technique consonant photographing with a suitable technique, radiological imaging, dental mapping and tissue sampling such as molar tooth, ribs or femur particle samples help the the identification of corpses and their submittal their families.

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Informed Consent: N/A
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