

THE INFLUENCE OF ENVIRONMENTAL FACTORS IN A CASE OF FORENSIC IDENTIFICATION

Radu Carmen ¹ Dan Perju Dumbravă²

1. MD, PhD, Universitatea Oradea-F.M.F, Serviciul Județean de Medicină Legală Bihor, raducarmencorina@yahoo.com
2. PhD, MD, UMF „Iuliu Hațieganu” Cluj-Napoca, IML Cluj-Napoca, danperjud@yahoo.com, Cluj-Napoca, str. Clinicilor 2-4.

Abstract

In cases of forensic identification with delayed discovery of the body, the influence of environmental factors is essential. The importance of the environmental factors in cases of deaths that occur in the direct and intense action of the medium factors is statistically overwhelming in Romania. The existence of materials more resistant than the soft tissues is primordial, -clothes- also the existence of a chartered dental file, or a personal belonging easily recognizable.

Key words: forensic anthropology, dementia, dental formula, ante-mortem dental records.

Case history: On 25.08.2009 a 82-old female suffering from known dementia disappeared from home. On 16.01.2010 bone fragments and clothing were found on the rocks at the riverside near the village Drăgești, Romania. Within a radius of about 4 m² in an underbrush -bones, clothes and a stick were discovered. The body was skeletonized.

Autopsy examination

Identificational data: examination of clothes^{Photos 3-} white cotton shirt, green cotton blouse, gray-beige striped sweater, black knitting sweater, blue crochet vest, sleeved blue shorts, brown knitting trousers, black wide skirt, dark blue apron, black woolen scarf, blue plastic shoes, partially red

b. Personal belongings: walking stick.

The clothes were cold-frozen, they were lying next to the skeleton and they were covered with dry leaves, mud and maggots.



Photo 3.

Photo.4

Photo. 5

c. The dental formula of the subject was analysed, but unfortunately the deceased didn't have any ante-mortem dental records to compare it with.

<ul style="list-style-type: none"> 1.1. old missing 1.2. old missing 1.3. old missing 1.4. old missing 1.5. old missing 1.6. old missing 1.7. old missing 1.8. rest coronary 	<ul style="list-style-type: none"> 2.1. old missing 2.2. old missing 2.3. old missing 2.4. old missing 2.5. old missing 2.6. old missing 2.7. old missing 2.8. old missing
<ul style="list-style-type: none"> 3.1. rest coronary 3.2. rest coronary 3.3. rest root 3.4. old missing 3.5. old missing 3.6. old missing 3.7. old missing 3.8. old missing 	<ul style="list-style-type: none"> 4.1. rest coronary 4.2. rest coronary 4.3. old missing 4.4. old missing 4.5. old missing 4.6. old missing 4.7. old missing 4.8. old missing

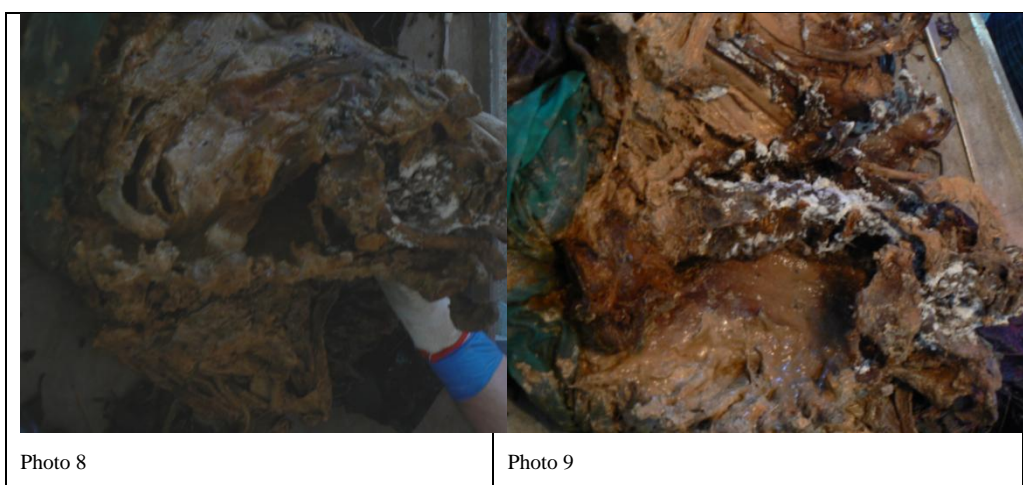
Internal examination

Head: complete detachment of the head from the cervical column, which was covered with dry leaves and larvae up to 0.6 cm. Cranial bones and viscerocranium are integral, mandible is dislocated.



The appearance of the skull

Neck: soft tissue is missing. C1 vertebra is missing. C2-C7 vertebrae are present and of integrity, articulations between the vertebral bodies, covered with muscular debris at sites and white mold deposits.



The appearance of the neck and the thoracic cavity

Thorax: lack of soft tissues. Integrity of thoracic bones, articulations between the vertebral bodies (integrity of ribs, sternum incomplete - missing xiphoid appendix, the thoracic vertebral column persists at T1-T4 level, the rest is missing). Thoracic organs cannot be examined, the thoracic cavity contains a whitish-brown paste, covered with whitish mold deposit and larvae up to 0.6 cm; it gives off a foul smell of putrefaction and mold.

Abdomen: lack of soft tissues. Abdominal organs are missing. Basin with disarticulated bones, right hip bone and sacrum persist and are fully or partially covered by brown-blackish soft tissue. Left hip bone disarticulated.
Skeleton: left upper limb - bones and soft tissues are missing, shoulder girdle (scapular) bones are present; right upper limb and bones totally disarticulated. The humerus, radius, ulna, carpal bones, metacarpal bones and phalanges are present and are complete or partially covered by blackish brown soft tissue; inferior limbs and bones disarticulated; femur, tibia, fibula and partially the tarsal bones, metatarsals and phalanges are complete or partially covered by blackish brown soft tissue.

Diagnosis based on macroscopical pathoanatomical analysis: advanced putrefaction with partial skeletonization.

Forensic autopsy conclusions:

1. Medical type and cause of death of A.A cannot be established precisely because of the advanced state of putrefaction and partial skeletonization.
2. According to the autopsy findings and the survey data, the death could be classified as nonviolent, and a possible cause is coronary myocardosclerosis
3. The death may have occurred approximately 4-6 months ago
4. Autopsy examination revealed no injuries in the skeleton and of the remaining soft tissues.
5. Actual signs of death (lividity, rigidity) can not highlighted
6. Signs of violence: No evidence

Identification

The identification of the subject was done by the family members based on the recognition of the clothes and the walking stick

Alternative scientific identification methods:

- An alternative identification method for this unknown body would have been a forensic anthropological approach, by constructing a biological profile with data on: age, gender, stature, race etc.
- Dental identification by comparison with ante mortem records. In this case there were no previous dental records to compare with.
- A DNA profile would be quite tricky to make in this case as the body has been lying for a long time, and DNA is degrading and adding artefacts.

CONCLUSION

In cases of forensic identification with delayed discovery of the body, the influence of environmental factors is essential. In opposition with situations when the body is preserved due to natural mummification, freezing or lignification, the importance of the environmental factors in cases of deaths that occur in the direct and intense action of the medium factors is statistically overwhelming in Romania.

The existence of materials more resistant than the soft tissues is primordial, -clothes- also the existence of a chartered dental file, or a personal belonging easily recognizable.

That is why the forensic specialists have to take into consideration all the factors that concur in the decomposition of the body, and to reconstruct and work backwards the environmental factors that caused the existing situation of the body of the deceased.

The idea is to exert a scientific synergistic addition of all forensic methods of identification and of course mainly to consider the environment factors that led to the existing state of decomposition of the body.

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