H18 Forensic Sciences' Contribution to a Murder Case With an Incineration Attempt

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After attending this presentation, attendees will understand the importance of a multidisciplinary approach in forensic pathology cases of greater complexity, such as when a murder is suspected. Frequently, only cooperation between forensic sciences can answer the investigative questions.

This presentation will impact the forensic science community by drawing attention to the resources forensic pathology has available and the importance of knowing when these contributions are crucial.

A corpse was accidentally found in an old warehouse by a group of youngsters. It was in an advanced decomposition stage with some body parts and clothes burnt. It was supine, covered by a partially burnt blanket. After preliminary examination, the police found a granite block next to the body and evidence of physical violence, such as blood on the scene suggesting beating and dragging of the body, as well as various types of burnt waste suggesting an incineration attempt. Later, the authorities found a copper bar near the crime scene. The corpse was unidentifiable since the face was unrecognizable due to decomposition and blunt force trauma; the body had no tattoos or other signs that could allow a positive identification. It was only possible to determine that it was a male.

The main goals of the investigation were to discover the victim's identity and investigate the cause and manner of death. Due to the external examination findings and lack of information about the circumstances of death, the contribution of a multidisciplinary forensic expert team was required.

Skull X-rays performed prior to autopsy revealed several skull and facial fractures. Chest and upper limb X-rays didn't reveal acute traumatic bone lesions.

The autopsy disclosed an advanced stage of bodily decomposition with fungal and larvae colonization. There were no identifiable skin wounds due to the stage of decomposition and incineration attempt. It was possible to validate the imaging findings. Macroscopically, the brain tissue consisted of a mass of frothy paste and all the thoracic and abdominal organs were in an advanced putrefactive stage with no major abnormalities.

Subungual swabs and fingernails, several teeth, and a spleen blood sample were collected for genetic analysis. After cautious observation it was decided to study the granite block since it presented some hairs on its surface and the copper bar because of the possible presence of dried bloodstains. Lung, trachea, liver, and burnt skin were sampled for histological analysis.

Expert examination of forensic anthropology was performed along with the autopsy and revealed that the victim was a Caucasian adult male, aged between 45 and 60 years at death, and between 1.68m and 1.82m (66.14in and 71.65in) tall. An antemortem fracture of the left elbow was also helpful for the identification, considered an individualizing feature. With regard to acute traumatic peri-mortem injuries, fractures of the facial skeleton including the left ramus of the mandible, the right temporal, right and left parietal, left sphenoid, and right orbital bones were observed.

The genetic analysis confirmed the corpse's identity by comparing the victim's and the alleged mother's DNA profile: it was a homeless man who was declared missing two months previousy. It wasn't possible to obtain any genetic profile from the potential weapons that could establish their link to the death.

At the microscopic examination, no trace of soot was found in the trachea or lungs, nor was any vital reaction shown on the skin. These findings excluded, the possibility of the victim being alive during the cremation.

The anthropological analysis also contributed to clarifying that the cause of death was due to traumatic facial and skull fractures associated with meningo-encephalic injuries produced by violent blunt force trauma.

In conclusion, the link between the results obtained allowed for the identification of the victim, the determination of the most probable cause and manner of death (homicide with blunt force trauma) as well as the type of weapon used.

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