D28 Electrical Homicide or Not?

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Learning Overview: After attending this presentation, attendees will understand that forensic engineers can play an important role in reconstructing the scene of an electrocution. These reconstructions assist criminalists in determining if a death could have been a criminal act that was perpetrated with the use of electricity, either intentionally (electrical homicide) or unintentionally (negligent homicide).

Impact on the Forensic Science Community: This presentation will impact the forensic science community by contributing to an improved performance of criminalists and others involved in an investigation of a suspected electrical homicide by availing themselves of forensic engineers and their expertise.

In this presentation, cases will be presented in which the cause of death is electrocution. Electrocution generally means that current has passed through the heart and death ensued. Through investigation, one may discover whether this death was caused intentionally, by criminal negligence, or other causes.

Electrical injuries can be multifaceted, and in many cases can cause devastating trauma to the victim's body or no visible trauma at all. The severity of electrical trauma can range from gross loss of limb and tissue due to sustained high voltage and high current contact. Low voltage and low current contact may not leave any marks on the body, depending on contact area, duration, and other environmental factors. Since most electrical injuries involve marks on the body, there can be challenges in accurately assessing the pathway(s) of current and the modes and circumstances of contact. When an electrocution is being examined, investigators must inspect the scene and the body before concluding.

In some cases, it can be difficult to determine whether the incident was deliberate, an accident, or if an electrocution occurred due to lack of evidence. For example, if a victim were to be electrocuted by fallen electrical wires, there are many possibilities of what caused the wires to fall in the first place. One possible situation is if an electrical worker installs wires in such a manner that they could foreseeably cause an electrocution, then such a case could be considered negligent homicide or manslaughter. Another situation is that the electrical system was sabotaged in some way and, if so, this would be intentional electrical homicide. The incident could also be the fault of the victim, such as electrical suicide or misadventure. Natural causes, such as floods, winds or a storm bringing down power lines and poles, as well as lightning, are other causes of electrocution.

When investigators examine the scene of an electrocution, they cannot afford to make any assumptions. Although some instances may appear to have a clear cause, all possibilities must be taken into consideration first, with the assistance of a forensic electrical engineer and their expertise.

Electrocution, Homicide, Electrical Injury