G8 Deaths Due to Blast Effects of Electrocution: A Case Series

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The goals of this presentation are to discuss the dangers of electrocution, the blast effects of electrocution, circumstances of hazardous exposure and the possible prevention of the hazard through the cases done in India. The attendees will be briefed on the mechanism of electrocution deaths with the case history and all the relevant details with detailed description of injuries supported with photographs. Discussion will be also extended to the pathology of electric shock accompanied with histology of cases.

This presentation will impact the forensic science community by sensitizing them to the issue of deaths due to electrocution, especially the blast effects of electrocution. The demarcation line between the injuries caused by electrocution and lightning runs very thin when it comes to differentiating them, which needs to be probed. As the severity of the electrical injury depends on the pathway of the electric current, it becomes vital to determine how the injury occurred. The autopsy findings of the cases will be highlighted along with supporting photographs and histology slides, concluding that there is no specific therapy for electrical injuries and that's the reason to believe that prevention remains the best way to reduce morbidity and mortality due to electrocution.

Death caused by electric shock is simply referred to as electrocution. Despite widespread and extensive usage of electricity for household as well as industrial purposes, the proportion of deaths due to electric shock is meager. Gross/visible damage due to electrocution may range from nil to extreme. Many factors, related both to victim and environment, play a role in determining the effects of electrocution. Death can be instantaneous due to cardiac fibrillation, respiratory arrest, or electro-thermal injuries caused by heat generated by the current. The heat, thus generated within the body in the latter situation, may cause explosive injuries, including amputation or rupture of organs themselves. Blast effects on the victim are more commonly noted in cases of lightning injuries where the lesion is attributed to direct current flow or due to a secondary fall after being struck.

Three different cases with blast effects of electrocution which were not witnessed and, hence, created undue anxiety for the investigating agencies, the victims' families, as well as the general public regarding the manner of death in those victims will be presented. Doubts were raised due to atypical and bizarre distribution as well as patterns of injuries on the victims. Electrocution deaths are mostly accidental, rarely suicidal, and more rarely homicidal. It becomes important to thoroughly investigate and document the circumstances of electrocution for insurance claims and to take precautions in relation to safety measures. History, in these cases, was insufficient. The deaths occurred instantaneously, and, hence it, was challenging for the forensic doctors to co-relate various findings. The findings at autopsy mimicked those of blast injuries due to lightning or explosives, but careful documentation and interpretation, along with the crime scene investigation, clinched the diagnosis.

Electric Shock, Blast Injuries, Autopsy

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