HOMICIDE BY ELECTROCUTION - A CASE REPORT

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Accepted: May 08, 2015 
Published: July, 2015

Citation: Dr Dinesh Rao Homicidal Electrocution-A Case Report. Vol 02. No 02.

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ABSTRACT

The deceased was brought dead to the casualty with a history of Alcoholic intoxication. He was last seen by his friends on the previous night in a nearby Shopping Complex. The Doctors summoned the Police, who ordered for an Autopsy which revealed a Patterned contact Electrical injuries over the right 2nd toe and death due to Electrocution. Toxicological report revealed 230mg% of Alcohol in blood and further investigation & crime scene investigation revealed the material used to establish the circuit. This case is presented to you to highlight the homicidal pattern of Electrical injuries and impress upon as the method adopted to meticulously execute the Crime. The uninsulated copper wire was wound around his Right 2nd toe and then connected to the Source which confirmed the homicidal nature of the act, the accused were arrested who confessed to the crime.

KEYWORDS: Electric Current, Source, Homicidal Electrocutution, Alcohol Intoxication.
INTRODUCTION

The passage of substantial electrical current through the tissues can cause skin lesions, organ damage and death, and this injury is commonly called Electrocution\(^1\). Fatalities are usually Accidental, both in domestic and Industrial environment. Suicides from electricity have reported whereas Homicides are rarely reported. The present case is one of this unusual incidence where Electricity was used for homicide. The individual was encouraged to drink to an extent as to render him unconscious and subsequently as planned his toe was tied with an electric wire and then connected to the Electric source.

Case History

The deceased 28 years old male was found lying unconscious in front of his shop and empty bottles of Liquor was found lying 50 meters from the scene. He was immediately rushed to the hospital with a history of Acute Alcoholic Intoxication. The doctors confirmed his death on arrival and were suspicious about the Cause of death as there was smell of alcohol and the muscle showed moderate rigidity. At this stage no injuries were noted by the Doctors in the Emergency department. The police were informed and an Autopsy was ordered.

AUTOPSY EXAMINATION

External Examination:
An Elderly Male, age consistent with the alleged age of 28yrs, length 169cms. Poorly built and nourished with dark brown complexion. Rigor Mortis present all over the body. Post mortem staining present over the dependent parts of the back. The body was cold being kept in the cold box. Dried mud stains present over the limbs, foot and clothes. Vomitus stains was present over the Clothing’s and smell of Alcohol was present. No signs of resistance were present over the body.

External Injuries:

01. A Circular patterned, shallow Crater lined by Dark grey elevated skin margins present around the crater around the terminal phalanx of right Second Toe. the margins were elevated 3mm above the surface. The base of the crater was Reddish brown. It margins showed a distinct zone of hyperemia immediately below the terminal Phalanx. It measured 4.8cms in circumference and 0.3cm in width and 0.3cm in depth.

02. Four ruptured blisters were present over the lateral aspect of right big toe adjacent to the External injury no 01. The skins over the blisters were charred each measuring on average 2-3mm and separated by 3-4mm distance.

Thus the Patterned injury indicted the contact Source and adjacent greater toe blisters as possible spark burns\(^1\). The electrical injury showed minute hemorrhages in the subcutaneous tissues.

03. There were few abrasions noted at places over the knees and the back consistent with the fall.

Internal Findings:
The Heart Weighed-310gms, Epicardial Hemorrhages present over the right atrium, ventricles and Endocardium were present. Both the lungs were congested and edematous each weighing on average 700gms. The Liver weighed 1600gms and was enlarged, showed early fatty changes. All other organs showed congestion. Petechial hemorrhages were noted in the white matter of brain, pleural surface and mucosal surfaces. The Gastric contents showed nearly Fresh food particles, mucosa showed features of early gastritis. Smell of alcohol was present in stomach, The Chest cavity and cranial cavity smell of Alcohol were present. Histological sections of the Burnt area revealed Dermo-epidermal separation with vacuolization, the forming of spaces or cavities within cells with coagulative necrosis of cells in the epidermis and dermis. The basal cells of skin are elongated with pyknotic nuclei. Dark metallic particles were noted in section confirming the contact with the Source.
The Cause of Death was opined as Fibrillation of the Heart due to Electric Current based on the Electric Mark, Circumstances, Crime scene evidence and Histopathological findings. However Body fluids were analyzed Toxicological Evidence which confirmed the presence of Ethyl alcohol in blood to 230mg%. Considering the High level of Intoxication sufficient enough to render the individual unconscious [in an occasional drinker] and Patterned of Electric injuries and Crime scene evidence it was concluded as Homicidal Electrocution.

DISCUSSION:
Most of Deaths from contact with Electrical source are accidental and are caused by contact with broken or non insulated wires in faulty domestic or industrials appliance. Suicides and Homicidal deaths of this nature are rare\(^6\). though Suicidal Electrocution have been occasionally reported \(^3,4,5,6\), but rarely Homicidal Electrocutions are reported. Al-Alousi(1990)\(^6\) reported a case where the accused wrapped flexible wires around the limbs and then connected to the Electric source in another case of Suicidal Electrocution reported by Nicolic.s(2004)\(^4\) the electric wire was wrapped around the wrist. The present case is one of the rare case of Homicidal Electrocution that was guised as Acute Alcoholic intoxication. The Pattern of injury around the terminal phalanx of the Right 2\(^{nd}\) Toe was one of an indication of a deliberate attempt by an individual. With the Blood Alcohol level of 230mg% in an occasional drinker it is unlikely for an individual to manipulate himself during this stage of intoxication to handle an uninsulated electric source in this pattern. Crime scene examination revealed the location of the source at 5ft above the Ground. The level of Alcohol indicated deliberate administration of Alcohol in the initial stages of investigation and the same was confirmed after the arrests of the suspects. This also reflected the Motive behind the Crime..Hence, in all cases of Electrocution the dilemma surrounding the manner of death could be solved first by ruling out the other possibility of death,Circumstantial evidence, Toxicological evidence and Histopathological evidence similar are the views of Nicolic.s(2004)\(^4\) and Bharath Kumar G. et al(2014)\(^7\). In the present case Accidental Electrocution was ruled out based on the pattern and distribution of electric injury and the Circumstances. The body was dry hence increased the Resistance of the body to electrical force \(^8\). The increased resistance of the skin contributed to increased transformation into heat and hence showed charring of the contact site\(^9\). The contact site was uninsulated and dry which has further increased the resistance leading to excessive damage locally. When an electric current passes through the tissues the ions in the cellular fluids are damaged leading to damage to the tissues\(^10\). The current passes through the skin producing heat, which causes boiling and electrolysis of tissue fluids, the heightened resistance also contributes to the increased Heat causing explosion of the skin and roll back from the surface\(^11\). The skin offers high resistance whereas blood offers low resistance and as such within the body, electricity tends to be conducted along the blood vessels to the Heart leading to sensitizing the Auricles and Ventricles causing Fibrillation. Munck.W[1934]\(^12\) described the signature of Electric injuries with the Contact surface, in the present case the Circular pattern around the Terminal Phalanx of Right 2\(^{nd}\) toe corresponded with the winding of uninsulated wire around it. Other factors which play important role in fatal electrocution like Personal Idiosyncrasies, Diseases of Heart\(^13\),Anticipation of shock\(^14\) which needs care full Autopsy Evaluation. The present case has awakened the curiosity about the influence of Alcohol in electrocution considering increased level of Alcohol in blood needs a further research analysis. In the present case proof of electrocution was taken from histological examination, gross examination and circumstances surrounding the death.

ACKNOWLEDGEMENT: SIMS,Bangalore,Department of Pathology, Forensic Science Laboratory.

CONFLICT OF INTEREST: Nil

ETHICAL APPROVAL: relevant Authorities Complied with the Study.
REFERENCES:

1. B.Knight; Forensic Pathology, 2nd Ed. Arnold; 1996: pp 319-324.


PHOTOGRAPHS:

1. Photograph showing the pattern of Electrical Injury around the Right 2\textsuperscript{nd} Toe.

2. Photograph showing the pattern of Electrical Injury around the Right 2\textsuperscript{nd} Toe and Big Toe.
3. Photograph showing epicardial Hemorrhages over the heart.