

# An unusual case of electrocution by a tile cleaning machine

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## Abstract

Electrocution is death caused by electric shock, the electric current passing through the body. In developing countries like India deaths caused by electrocution are mostly accidental deaths. The diagnosis of death due to electrocution may be difficult as electric injuries are often misdiagnosed. The forensic pathologist is able to diagnose electric injuries when typical marks are present. When typical marks are not present careful evaluation of the injuries, details at the scene of crime and the correlation of injuries with the circumstances of scene of crime may help to reach a diagnosis regarding the cause of death. The current case study is an attempt to discuss the various aspects in accidental death due to electrocution.

**Keywords:** electrocution, tile cleaning machine.

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## CASE REPORT

A 45 year male, tile cleaner by occupation had a history of fall of tile cleaning machine over his chest while cleaning tiles at a construction site. The police officials investigating the case had suspected the deaths due to injuries sustained by the fall of tile cleaning machine over the chest. The body was reported to postmortem examination at department of forensic medicine, government medical college, Nagpur. On external examination the shirt was burnt at two places at the front of right half. Electric entry wound was present over the right side of chest of size 5cm x 3 cm. Another electric entry wound was found over the right side of chest below the above mentioned injury of size 5cm x 4cm. Another electric entry wound was present over the dorsum of right index finger involving proximal and middle phalynx of size 6cm x 1cm. Other injuries in the form of abrasions

were found over the front of left chest and over the right pinna. On internal examination petechial haemorrhages were found over the lungs, heart and brain matter. The details of the scene of crime were asked by the police officials. Spot panchnama, spot photographs and photographs of the tile cleaning machine were obtained by the police officials. Tile cleaning workers work while water is on the floor and this increases the risk of getting electrocution. After considering all aspects the cause of death was given as “postmortem findings are consistent with death due to electrocution”.

## DISCUSSION

Electrocution is death caused by electric shock, the electric current passing through the body. The word is derived from “electro” and “execution”.<sup>1</sup> The word is also sometimes used to describe non fatal injuries due to electricity.<sup>2</sup> The first recorded accidental electrocution (besides lightening strikes) occurred in 1879 when a stage carpenter in Lyon, France touched a 250 volt wire.<sup>3</sup> The total number of accidental deaths by electrocution in India was 9606 during 2014. The top three states in terms of accidental deaths by electrocution in India during 2014 were: Madhya Pradesh, Maharashtra and Rajasthan. The total number of accidental deaths by electrocution in Maharashtra was 1373 during 2014, which was 14.29% of the total number of accidental deaths by electrocution in India during the year.<sup>4</sup> The hazards of electric current depends on the amount of current and the length of time for which it flows through the body. The severity also

depends on whether the path of the current includes a vital organ. Low current usually cause ventricular fibrillation in heart. Large current cause permanent damage via burns and cellular damage.<sup>5</sup> In western world accidental deaths caused by electrocution are not common owing to the good safety measures and high level of awareness. However many cases of suicides are reported. As against this, in developing countries like India accidental deaths caused by electrocution are far more common than suicidal deaths. In India most of the victims suffer electrocution while working in their homes.<sup>6</sup> In most cases only entry marks are seen, while in some cases both entry and exit wounds are seen while in few cases no marks are seen. Few cases show burns over the body and cloths. As per sites of the body upper limbs are the most common sites to show the electrocution marks. Hands and fingers are the common sites for entry marks while soles and feet are the common sites for exit marks.<sup>7</sup> Underestimation of the danger of live circuits and carelessness play a part in work place incidents where as ignorance, faulty domestic appliances, frayed or broken flex of electric cables, improper earthing accounts for many of the domestic accidents. Many factors like illiteracy, lack of awareness about the hazards of electricity, poor maintenance of equipments and wire

linings are responsible for accidental electrocution. Victims may also suffer secondary injuries encountered during fall to the ground. Promoting health education on how to prevent electrocution, use of simple safety precautionary measures, awareness about the use of good quality electrical appliances and use of safe electric circuits are the need of the hour to prevent accidental deaths due to electrocution.

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