

# Amputation of Penis Due To Electrocution- A Case Report

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## Abstract

Electricity is an integral part of modern society. Without electricity the existence of human life seems difficult, but it has the capacity to stand life and destroyed the life up to the death. The most fatalities caused due to electricity are accidental and result from passage of an electric current [both low & high voltage] through the body. Penile trauma presents a difficult physical and psychological problem and is rare. The causes of penile trauma are varied; it can be iatrogenic or caused by traffic accidents, thermal and electric burns, ritual circumcision, animal bites, gunshots or self-mutilation. The type and extent of penile trauma varies from mild to severe injuries, sometimes even with total amputation.

In the present case, a 24 year old young male from Palwal (Haryana) sustained electric burn injuries while he was standing in the balcony and came in contact with high voltage electric wires passing in front of the balcony. He was admitted in Safdarjung hospital, Delhi and expired on the same day. During autopsy electric contact burn marks were present on unusual sites of the body like head, neck, abdomen, pubic region and root of penis with amputation of penis. Electric flash burns were also present on different parts of the body along with fracture of cervical vertebra.

**Key Words:** *Electricity, Electric current, Electric burn injuries, Electrocution, Penile trauma, Amputation of penis.*

## Introduction

Electricity is an integral part of modern society. Without electricity the existence of human life seems difficult, but it has the capacity to stand life and destroyed the life up to the death. The most fatalities caused due to electricity are accidental and result from passage of an electric current [both low & high voltage] through the body. Suicides and homicides from electrocution are very rare.<sup>1</sup> In comparison to western countries India shows relatively higher incidence of electrocution.<sup>2</sup> Penile trauma presents a difficult physical and psychological problem and is rare, because

the penis is a mobile organ enveloped into loose skin, well protected by its position; however, the penis is more prone to trauma during sexual intercourse while rigidly erect.<sup>3</sup> The causes of penile trauma are varied; it can be iatrogenic or caused by traffic accidents, thermal and electric burns, ritual circumcision, animal bites, gunshots or self-mutilation.<sup>4,5,6,7</sup> Reports of trauma to the external genitalia are sporadic. The type and extent of penile trauma varies from mild to severe injuries, sometimes even with total amputation.<sup>8</sup>

## Case history:

A 24 year old young male from Palwal (Haryana) sustained electric burn injuries on 11/11/2018 at around 5:30 AM while he was standing in the balcony and came in contact with high voltage electric wires passing in front of the balcony. He was initially taken to a private hospital at Palwal. Then referred and admitted at Safdarjung Hospital, Delhi on 11/11/2018 at 09:10 AM where he died while undergoing treatment on 12/11/2018 at 12:00 AM.

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### Autopsy findings:

Dead body was of a male wrapped in white coloured hospital sheet. Moderately built, Cornea was hazy. Rigor mortis was present all over the body. Post mortem staining was present over back except pressure and burnt areas, and was fixed.

### Antemortem external injuries:

(1) Electric contact burn marks, 2 in number, of sizes 5 cm x 3.5 cm x scalp tissue deep and 3 cm x 2 cm x scalp tissue deep respectively were present over back of head on left side. Margins were irregular, everted and base was indurated. Surrounding area was pale. Blackening was present around the wound. Scalp hair were singed at places. (Fig. 1)

(2) Electric contact burn mark of size 12 cm x 5 cm x muscle deep was present over nape of neck. Margins were irregular, everted and base was indurated. Surrounding area was pale. Blackening was present around the wound. (Fig. 1)

(3) Electric contact burn mark of size 7 cm x 3 cm x subcutaneous tissue deep was present horizontally over right side front of abdomen, situated 10 cm below the umbilicus. Margins were irregular, everted and base was indurated. Surrounding area was pale. Blackening was present over and around the wound. (Fig. 2)

(4) Electric contact burn mark of size 12 cm x 3.5 cm x muscle deep was present horizontally over pubic region on right side. Margins were irregular, everted and base was indurated. Surrounding area was pale. Blackening and charring was present over and around the wound. (Fig. 2)

(5) Electric contact burn wound of size 5 cm x 4.5 cm x muscle deep was present over root of penis and penis was amputated and missing. Margins were irregular and everted, and base of wound was indurated. Blackening and charring was present over and around the wound. (Fig. 2)

(6) Epidermal to dermo-epidermal electric flash burn injuries were present in patches over face and neck, in patches over back of chest, in patches over front of

abdomen, external genitalia and in patches over left forearm. Right upper limb including both palms, front of chest, back of abdomen and both lower limbs including soles were spared. Total electric flash burn injury involved about 20 % of total body surface area. Burnt area showed redness, peeling and blackening of skin at places. (Fig. 1, 2, 3)

**Internal examination:** Cervical vertebra was fractured at C3-C4 vertebral level with blood extravasation at fractured site. Underneath spinal cord was contused. Lungs were congested and edematous. Stomach was empty with no unusual smell and normal mucosa. All other organs were congested.

Opinion regarding cause of death was given as shock as a result of electrocution.



Fig. 1- Figure showing electric contact burn marks over back of head and nape of neck, and electric flash burn injuries



Fig. 2- Figure showing electric contact burn marks over front of abdomen, pubic region and penis with amputation of penis due to electrocution, and electric flash burn injuries



**Fig. 3- Figure showing electric flash burn injuries over face, neck, shoulder and upper part of back of chest**

### **Discussion**

In a study done by the author in Bangalore, majority 48.8% of electrocution cases were young adults in the age group of 21-30 years followed by 31-40 years which include 17.1% cases. Majority of victims of fatal electrocution were male (85.4%) and only 14.6% were female.<sup>9</sup> The studies conducted by Guntheti BK et al<sup>1</sup>, Rajesh B et al<sup>10</sup> and Shaha KK et al<sup>11</sup> also reported that most of the victims were from 21-30 years age group. Similar findings of male dominance were also reported by them.

In the present case also the victim of electrocution was a 24 year old young male.

The reason for such a marked male predominance of young age in a variety of studies from different communities is probably the fact that mostly males of young age are involved in the electrical works.

Accidental electrocution among these would have occurred because of carelessness, ignorance, haste, malfunction of appliances or equipment such as ineffective insulation, lack of protective earthing, faulty grounding and short circuits.<sup>12</sup>

In a study conducted by Ragui S et al<sup>13</sup> in Manipur, most of the victims were electrocuted on the road side (68%) and the remaining victims were electrocuted in their houses. While in a study conducted by Pathak AK et al<sup>14</sup> at Jaipur 70% victims were electrocuted at home.

In the present case the victim got electrocuted at home while he was standing in balcony.

In the study done by the author in Bangalore, in most of the cases (46.3%), there were only entry wounds. While in 29.3% cases both entry and exit wounds were seen. Electrical flash burns were seen in 36.6% cases. Majority of cases (75.6%) showed electric contact marks present on upper limbs including palms and fingers.<sup>9</sup> This usual site of electric entry mark is also mentioned in many textbooks.<sup>15,16</sup> In a study conducted by Rajesh B et al<sup>10</sup>, 44.5% cases showed only entry wounds while in 27.8% both entry and exit wounds were present. In the study conducted by Guntheti BK et al<sup>1</sup>, 40.3% cases showed only entry wounds, 35.48% cases showed both entry and exit wounds. While 25.8% cases showed flash burns.

In the present case both electric contact burn marks and electric flash burns were seen. Electric contact burn marks were present on unusual sites of the body like head, neck, abdomen, pubic region and root of penis with amputation of penis. Fracture of cervical vertebra also present.

### **Conclusion**

The etiology of penile trauma varies but ranges from self-infliction in psychiatric patients, to industrial accidents or assaults, and rarely from circumcision mishaps. The traumatic amputation of the penis in adults following electrocution is rare. Whenever it happens, it can be devastating to the patient, his spouse and his relatives.

The risk of getting electrocuted from the haphazardly installed electric wires without proper maintenance and careless use of electrical appliances is the matter of concern. Nevertheless, spread of awareness and adoption

of safety measures are important factors required for prevention of fatal electrocution and penile trauma.

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**Ethical Clearance-** Not applicable.

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