

High Tension Electric Burn with Face Defect- Case Report

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Abstract: High tension electrical burns are a rare but devastating form of injury. The objective of this case report is to bring to the fore the severity of this rare form of injury and highlight the benefits of active surgical management of such a condition. A 36-yr-old male had sustained 21% high-voltage electrical injury in agricultural field due to contact with high tension wire 32 hrs before his presentation, with Burns involving left face, neck, thighs, hands and trunk. He received primary medical care at local Hospital before being brought to our Hospital. He was treated with I V fluids, antibiotics and had blood investigations showing raised Bilirubin. MR Angiogram was done which showed flow in Superficial temporal artery and Facial arteries upto Mandibular level only suggestive of Vascular compromise. CT Brain and Ultrasound abdomen were normal and LFT showed improvement. Surgical intervention was planned to prevent the life threatening risk of Carotid blow out. Surgical debridement of avascular tissues with a Pectoralis Major Myocutaneous flap was done on the 6th day of admission. Post operatively patient had lagophthalmus and bells phenomena. He did not have any keratitis or Corneal Ulcer. Flap settled well with an area of Mastoid exposed. Patient is taking normal oral diet.

Discussion And Conclusion: Injuries caused by exposure to 1,000 volts or greater are defined high-tension electrical burns. High-tension wires can carry up to 100,000 volts. Despite the devastating nature of this type of electrical injury, all hope is not lost. Prompt appropriate resuscitation as well as early surgical debridement with skin and soft tissue cover would save lives of most of these patients by preventing risk of Carotid blowout.

Keywords: High-voltage electrical injury, Superficial temporal artery, Sternocleidomastoid, Pectoralis Major Myocutaneous flap

I. Introduction

High tension electrical burns are a rare but devastating form of injury. The objective of this case report is to bring to the fore the severity of this rare form of injury and highlight the benefits of active surgical management of such a condition. We report the case of a patient who we managed for high-tension electrical burns and highlight the main features of his presentation and management.

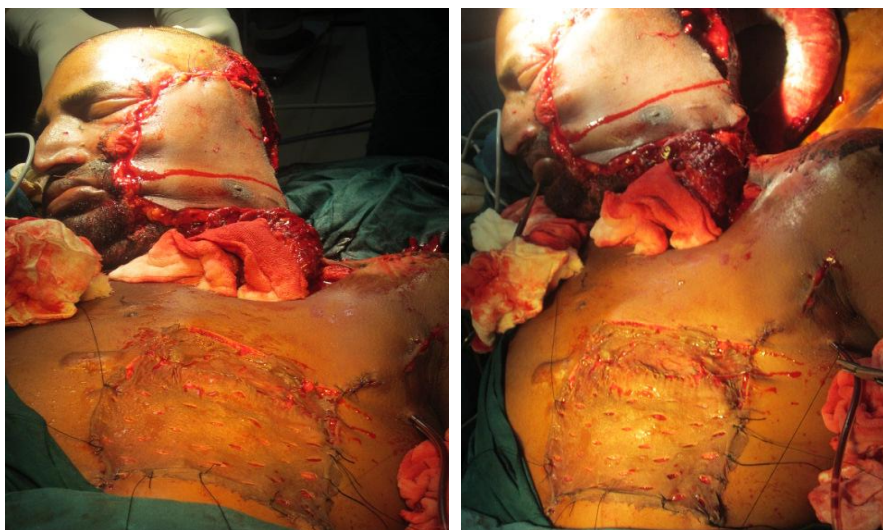
II. Case Report

A 36-yr-old male had sustained 21% high-voltage electrical injury in agricultural field due to contact with high tension wire 32 hrs before his presentation, with Burns involving left face neck, thighs, hands and trunk. He received primary medical care at local Hospital before being brought to our Hospital. He sustained deep burns to left face with the following structures in the defect Temporalis, soft tissue around Zygomatic arch, remnant of charred left ear, Avascular condyle and Coronoid process of Mandible, Masseter, Parotid gland & exposed temporal bone and parts of Parietal and Occipital and upper part of left Sternocleidomastoid, with exposed Carotid and Jugular vessels and Facial nerve. Deep burns involving left thigh dorsum right hand and 1st web space left hand were also noted. He was treated with I V fluids antibiotics and had blood investigations showing raised Bilirubin. MR Angiogram was done which showed flow in Superficial temporal artery and Facial arteries upto Mandibular level only suggestive of Vascular compromise. Ct Brain and Ultrasound abdomen were normal and Lft showed improvement.

At the time of admission



Surgical intervention was planned to prevent the life threatening risk of Carotid blow out. Surgical debridement of avascular tissues with a Pectoralis Major Myocutaneous flap² was done on the 6th day of admission. Pectoralis Major Muscle was mobilised after dividing its origin and insertion. Flap adjustment was done at its posterior insertion site after 14 days. Post operatively patient had lagophthalmus and bells phenomena. He did not have any keratitis or Corneal Ulcer. Flap settled well with an area of Mastoid exposed . Patient is taking normal oral diet. He is in the Hospital at present awaiting skin grafting procedure for the post Burn raw areas thigh and neck, and partly exposed Mastoid over which granulations appeared and skin grafting done. His general condition is stable with resumption of activities of daily living.



Intra-Op



Post-op

III. Discussion And Conclusion

Injuries caused by exposure to 1,000 volts or greater are defined high-tension electrical burns. High-tension wires can carry up to 100,000 volts¹. Despite the devastating nature of this type of electrical injury, all hope is not lost. Prompt appropriate resuscitation as well as early surgical debridement with skin and soft tissue cover would save lives of most of these patients by preventing risk of Carotid blowout.

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