

Two Cases of an Unusual Presentation of Electrical Burn Injuries



Burak Özkan¹, Santiago Santelis², Abbas Albayati¹, Çağrı A. Uysal¹, Mehmet Haberal²



¹Baskent University Faculty of Medicine, Department of Plastic, Reconstructive and Aesthetic Surgery, Ankara, Turkey
²Baskent University Faculty of Medicine, Department of General Surgery, Burn and Fire Disasters Institute, Ankara, Turkey

Introduction

Electric injuries have a wide variety of consequences ranging from disfigurements, extremity loss and death. The limbs are the most affected sites because of the high resistance of muscles and tendons to electricity. The most common pathway of entry to exit point is upper limb to lower limb, so the thigh to foot pathway is exceptional. In this case report, we aimed to present the mechanism of how two construction workers suffered a high-voltage electric burn.

Case Report

Two construction workers, with no relevant past history, experienced a work-related accident. They were shocked by an electric current while carrying out work on a public road in the morning; the task involved guiding and unloading with the hands a steel plate lifted by a truck-mounted crane parked near overhead high voltage power lines. During the procedure, the crane accidentally contacted a 6300-volt overhead energized line and the patient provided a path to ground being electrocuted with the consequent electrical injuries (**Figure 1**). On physical examinations both of them had third degree electric entry and exit point burns limited to their lower extremity (**Figure 2-3**). Multiple surgical interventions were performed for reconstruction of lower extremity wounds (**Figure 4-5**).

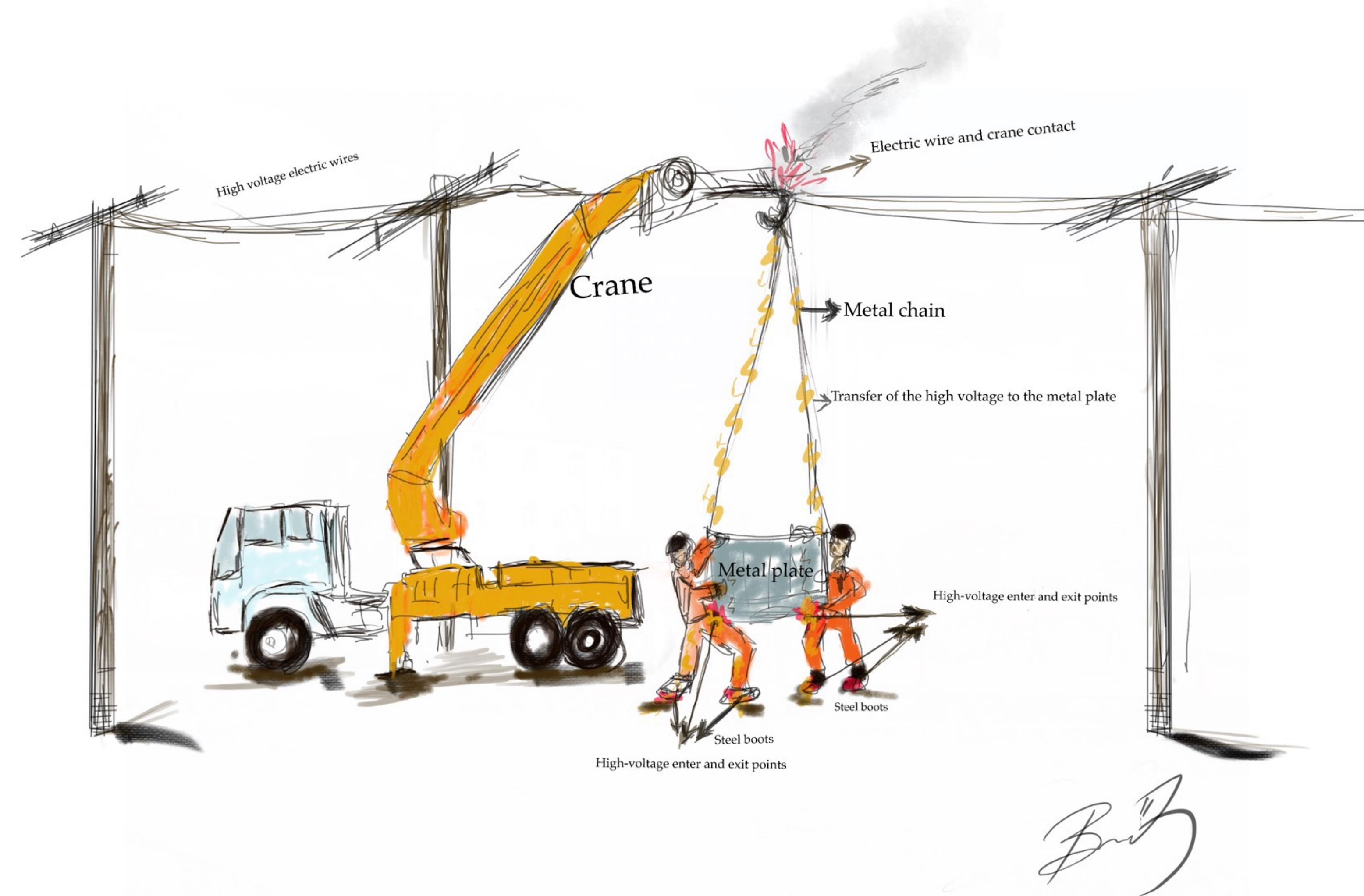


Figure 1: Illustration of the injury



Figure 2: The entrance and exit points of Case 1



Figure 3: Reconstruction of the injury zones of Case 1 with split thickness skin grafts and SCIP flap.



Figure 4-5: Reconstruction of right foot dorsum with free thoracodorsal artery perforator flap in Case 2.

Conclusions

Every year, an average of 15 electrocutions are caused by contact between cranes overhead power lines, and over 50% of the crane-related electrocutions occurred in the construction industry. This two cases remind us the importance of safety procedures for construction workers, following these guidelines will reduce the incidence and severity of the injuries. Electric burn pattern limited in the lower extremity is not usual and wearing unappropriated dressings can aggregate the injury.