Can a Postmortem Skin Biopsy Predict Cause of Death?

Deepti Sukheeja, Janani Shanmugam, Arulselvi Subramanian, Sanjeev Lalwani

Departments of Laboratory Medicine and Forensic Medicine, Jai Prakash Narayan Apex Trauma Centre, All India Institute of Medical Sciences, New Delhi, India

Address for correspondence: Dr. Arulselvi Subramanian, E-mail: arulselvi.jpnatc@gmail.com

ABSTRACT

Electrocution continues to be a major cause of death among workers because they and their employers do not recognize the importance of safety training and implementing safe practices. Part of the reason is that at home and on the job we take electricity for granted. Relying on the benefits of electricity, we may forget its hazards. Death due to electrocution can occur without any marks on body. Skin biopsy of an autopsy case of a male, plumber by occupation, who was brought dead to the hospital, was examined to find out the cause of death. Electrical marks were observed on his palm during autopsy and were supposedly thought to be the cause of death. The histopathology of skin lesion confirmed the diagnosis. We, hereby, report this case as the histopathology in electrocution has rarely been discussed in papers and it can aid in investigations to know the cause of death in unknown cases.

Key words: Electrocution, postmortem, skin biopsy

INTRODUCTION

Electrical hazards represent a serious, widespread occupational danger; practically all members of the workforce are exposed to electrical energy during the performance of their daily duties, and electrocutions occur to workers in various job categories. Many workers are not aware regarding potential electrical hazards present in their work environment, which makes them more vulnerable to the danger of electrocution. Electricity is a ubiquitous energy agent to which many workers in different occupations and industries are exposed daily in the performance of their duties. Many workers know that the principal danger from electricity is that of electrocution, but few really understand just how minute a quantity of electrical energy is required for electrocution. Electrocution should be considered in any unusual death in the home or factory. Electrical injuries are ranked as the fifth most common cause of occupational fatalities. About two-thirds of electrical injuries occur in persons between 10 and 40 years of age. The effect of an electric current is enhanced by moisture on the skin or a damp environment plus good earthing. In the case of high-tension current extensive burns and charring of the tissues may occur. Electricity may cause burns at both entrance and exit from the body, but characteristically the marks seen at the point of entry, although occasionally no mark or burn can be seen on the skin. Knowledge of microscopic features in electrical marks can help us knowing the cause of death. Hence, our case report discusses its histopathology. To the best of our knowledge, there are very few papers in literature documenting on histopathological features.

CASE REPORT

A 28-year-old male, plumber by occupation, was brought dead to casualty by an attendant. He was last seen alive working on a motor that pumps water out of a well. On postmortem cause of death could not be identified except an electric mark on palm. It was a circular raised pale lesion measuring 2 × 1cm on the left hand palmar aspect, firm in consistency without surrounding inflammation. Inquest also ruled out foul play. Viscera were sent for chemical analysis which ruled
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