



LIGHTNING STRIKES THRICE: A CASE REPORT OF THREE SISTERS STRUCK BY LIGHTNING

Shivani Aggarwala^{1,2}, James Doherty^{1,2}, Peter Haertsch¹, Andrea C Issler-Fisher¹, Peter Maitz^{1,2}

¹Burns Unit, Concord Repatriation General Hospital, Hospital Rd, Concord NSW 2139, Australia

²University of Sydney, Camperdown, NSW 2006

INTRODUCTION

Lightning reaches the Earth more than 100 times per second or 8 million times per day. The chance of being struck by lightning depends on the population density and landscape features, which may either expose or protect people to being hit. Global mortality due to lightning is estimated at 0.2-1.7 deaths per 1 million. Approximately 10-30% of patients struck by lightning die and 74% of survivors present some permanent sequelae. [1] Here we present a case of three sisters, two identical twins and one older, struck by lightning with varying outcomes.

CASE SUMMARY

Three sisters sitting on a wooden bench with cast iron structuring, under a tree, during an electrical storm. The oldest sister was holding an umbrella open with the other two sisters huddled under. A lightning bolt, possibly arcing to the umbrella, was conducted from the eldest sister, through the first twin and to the second twin, exiting through the buttocks of the second twin.

The eldest sister suffered cardiac arrest with a down time of approximately 10 minutes prior to the commencement of cardiopulmonary resuscitation and pulseless electrical activity at the scene. She was transferred to the ICU of a burns unit with GCS 3, frequent myoclonic jerks and TBSA 5% mixed thickness burns to her chest. Initial non-contrast CT brain showed no acute intracranial pathology however repeat CT brain 4 days later showed loss of grey white differentiation of the supratentorial region, consistent with hypoxic brain injury. A formal EEG showed features consistent with hypoxic brain injury. In the context of her poor prognosis, it was decided together with her family that care would be withdrawn.

The two twins suffered minor burns, with the twin who was sitting in the middle suffering a 10 cent coin size full thickness burn to her left forearm which was in contact with her twin sister and a likely exit site. The second twin suffered a 20 cent coin size full thickness burn to her buttocks that was in contact with a metal bolt on the bench and a likely exit site. Interestingly she presented with Lichtenberg figures over her chest and abdomen that resolved after 24 hours.

Both twins had a modest rise in their creatinine kinase (CK) level of approximately 426 U/L and 356 U/L respectively. They were managed conservatively with 24 hours of cardiac monitoring, dressings to their burns and resolution of their elevated CK level. They were discharged from hospital 24 hours post admission.



Lichtenberg figures are a transient skin pattern, pathognomonic for lightning injury. Biopsies reveal no pathological changes in epidermis, dermis, nerve, or collagen. The absence of histopathological changes is consistent with the hypothesis that they are a physical phenomenon, and not a class of burn. [2]

REFERENCES

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- Resnik, Wetli Lichtenberg figures. Am J Foren Med Path,17 (1996), pp. 99-102