



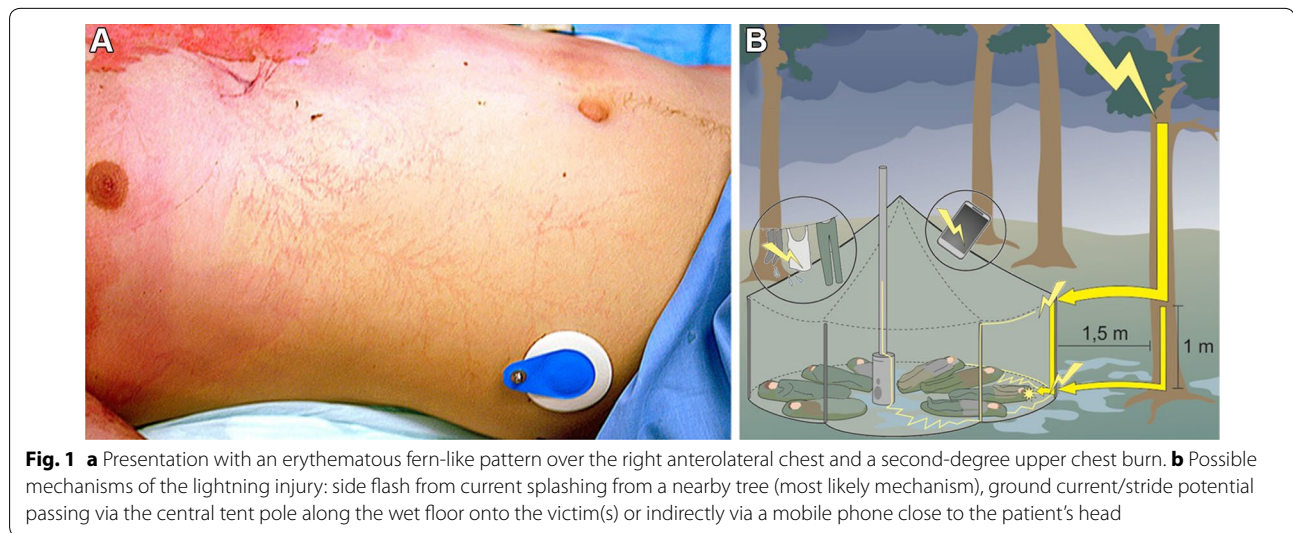
# Resuscitated unconscious male: Lichtenberg's sign lighting the way

Andrew Lindford<sup>1\*</sup>, Jyrki Vuola<sup>1</sup> and Esko Kankuri<sup>2</sup>

© 2017 Springer-Verlag Berlin Heidelberg and ESICM

An intubated unconscious 18-year-old male was admitted to the trauma center with a fern-leaf erythematous pattern on his right chest and flank, a second-degree upper chest burn, and a deep full-thickness occipital scalp burn (Fig. 1a). Earlier in the day his military unit had completed marching and drill exercises in torrential rain. At night in wet tents, his squad suddenly awoke to find him unconscious and in cardiac arrest. After 25 min of cardiopulmonary resuscitation he regained sinus rhythm, but with inadequate breathing had an oxygen saturation of only 52%. Lichtenberg's figures (keratographic markings) with their dendritic, arborescent or fern-like branching erythematous skin pattern are

pathognomonic for lightning injury (Fig. 1b). Georg Lichtenberg first coined the term in 1777 whilst experimenting with static electricity. The markings' pathogenesis is unclear, but may result from subcutaneous blood extravasation, appearing within an hour of injury and rapidly fading within a couple of days, much like a wheal and flare (or dermatographic) reaction. Lack of histopathological changes on biopsy contradicts Lichtenberg figures being a physical phenomenon. The patient was discharged after 2 weeks and long-term follow-up revealed mild cognitive impairment. The rest of his squad sustained only minor burn injuries and neuropsychological symptoms.



\*Correspondence: ajlindford@gmail.com

<sup>1</sup> Helsinki Burn Centre, Department of Plastic Surgery, Töölö Hospital, Helsinki University Hospital (HUS), Topeliuksenkatu 5, P.O. Box 00029, Helsinki, Finland

Full author information is available at the end of the article

**Author details**

<sup>1</sup> Helsinki Burn Centre, Department of Plastic Surgery, Töölö Hospital, Helsinki University Hospital (HUS), Topeliuksenkatu 5, P.O. Box 00029, Helsinki, Finland.

<sup>2</sup> Department of Pharmacology, Faculty of Medicine, University of Helsinki, Helsinki, Finland.

**Acknowledgements**

We thank Sole Lätti MSc for making the illustration for this article. We also thank the patient for his permission to share the information. All authors declare no conflicts of interest.

**Author contributions**

All authors have made substantial contributions to the conception and design, acquisition of data, drafting the article, and final approval of this version.

Received: 26 February 2017 Accepted: 7 March 2017

Published online: 11 March 2017