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Case Report

A bolt from the blue: Lightning injuries

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Introduction

Lightning injuries are as old as mankind. Lightning injuries were described in Hindu mythology and Bible. It continues to be an enigma, and many myths are still in circulation.[1] Lightning causes 1000 deaths worldwide every year and is second only to floods as far as environmental disasters are concerned. In 70% of cases the lightning injuries are non-fatal and many cases of lightning injuries are often unreported.[2] Lightning affects multiple systems and sometimes difficult to diagnose unless characteristic features or eyewitness history is available. Here we report a series of nine serving soldiers hit by lightning while operating in a mountain terrain.

Case report

We received nine patients 11 h after having apparently struck by lightning. The individuals were deployed in a mountainous terrain performing operational tasks at night when it started raining heavily punctuated by lightning strikes. They were exposed in the open with weapons in their hands and there was a large tree six feet away. The lightning bolt struck the tree nearby and thereof to individuals in the vicinity with such severity that all of them were thrown off and all of them sustained transient loss of consciousness. A thorough examination after evacuation to the hospital including pulse, blood pressure, respiratory rate and systemic examination including ear and eye examination was done. The details of clinical examination are given in Table 1. The investigations that were carried out included complete blood count, urine analysis including myoglobinuria, cardiac enzyme tests, serial ECG monitoring, and serum electrolytes. All patients had transient loss of consciousness immediately after the lightning strike which lasted for few minutes and at the time of admission they were conscious. Two patients had ventricular ectopics on the electrocardiogram which disappeared after three days. Six of nine patients had bradycardia <60/mt initially for three days. Five patients sustained keraunoparalysis involving lower limb in three patients and upper limb in two. All of them were ambulant after 48 h. Two patients had pain in the left upper limb which was of moderate severity.

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Table 1 – Showing the clinical findings.

Findings	No. of patients (%)
Age group	28–35 (Avg 29 yrs)
Keraunoparalysis	5 (55%)
Skin findings	5 (55%)
Limb pain	9 (100%)
Bone fractures	1 (10%)
Cardiac arrhythmia	2 (22%)
Bradycardia	6 (66%)

One patient had sustained fracture left clavicle. Five patients had skin finding in which two had classical Lichtenberg figures (Fig. 1) one on left shoulder and left arm respectively. Two patients had streaky erythematous changes on their left glutaeal region.[6] None of them had exit wounds. None of the patients had elevated cardiac enzymes, myoglobinuria, electrolyte imbalance, eye and ear findings. They were administered Anti tetanus prophylaxis.

Discussion

Lightning is caused by a unidirectional, massive, current impulse with several return strokes back to the cloud, which is neither the direct nor alternating current, lasting for a very short period, leading to mild superficial burns to various systemic injuries.[3] An individual's chance of getting hit by lightening is highest either at the beginning or end of a storm. Lightning strikes are more common during late afternoon or early morning,[1] but in our study the injuries were sustained during the night. Lightning occurs in many forms, like streak lightning (most common), sheet lightning, bead lightning and least common called Ball lightning.[4] The clinical features of

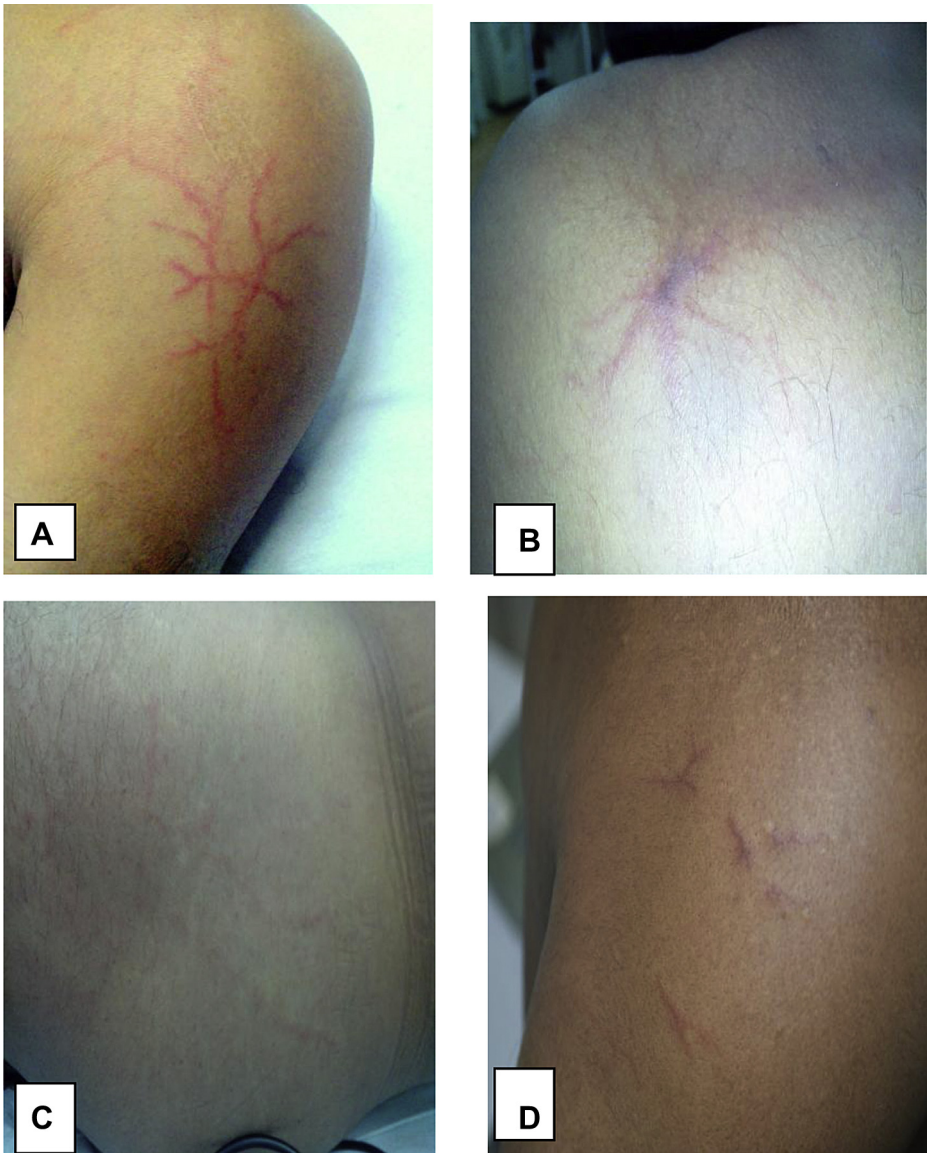

Fig. 1 – Showing skin findings. (A) and (B) depicting fern type and (C) and (D) depicting erythematous streaks.