

# The Harry Potter Forehead Scar Following A Lightning Injury

N Shamsian, M Jones, M Brough, R Standish, J Humberson

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## Abstract

Lightning strikes kill 1,000 people per year worldwide. They are also responsible for several hundred deaths and thousands of injuries each year in this country. Survivors sustain a variety of neurological, cardiac, musculoskeletal, and dermatological injuries. Eye and ear injuries are also noted in the literature. We report a case of a 14 year old girl.

## CASE REPORT

This is a case report of a 14 year old girl who presented to The Royal Free Hospital Plastic Surgery Unit with a forehead lesion. Four years previously, she had been struck by lightning whilst walking on a gravel road. She was wearing a metal hair-clip at the time. The lightning apparently struck her right trainer and caused a hole. She noticed a well-demarcated, mobile, hard lesion a few months later. A scar was also present over the supra-orbital area as shown in the photograph below.

Figure 1



She had excision of the lesion done under general anaesthetic at The Royal Free Hospital in April 2003.

Figure 2



The histology report showed a hard foreign body embedded in tissue. Due to the consistency of the lesion sections could not be taken. The lesion was X-rayed and thought to be a piece of stone.

## DISCUSSION

Lightning strike, a natural phenomenon may have potentially disabling sequelae. The physics of lightning strike and the physiology of lightning injury are discussed widely in the engineering and medical literature. The four classical electrical mechanisms of lightning injury are described in engineering journals. A fifth mechanism, injury by a weak upward streamer that does not become part of a completed lightning channel, has also been discussed in the literature by lightning researchers. Cardiac and respiratory arrest may occur secondary to the direct effects of current. The majority

of lightning strike victims have associated multi-system involvement, including neurological complications, burns, and associated blunt trauma.

Following discussion with our astronomy colleagues, the mechanism of injury in our patient has become clearer. It appears the initial lightning strike caused a direct injury to the shoe, causing a hole and dispersing a shower of gravel upwards. The metal hair-clip may have acted as a conductor for the electricity, and caused the forehead burn which later healed as a supra-orbital scar. A piece of gravel may have become embedded in the forehead and evoked an inflammatory response in the local tissues.

This is a rare presentation of a forehead lesion which has not been previously described in the literature.

### **CORRESPONDENCE TO**

nshamsian@hotmail.com

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**Author Information**

**N. Shamsian**

Department of Plastic Surgery, Royal Free Hampstead NHS Trust

**M. Jones**

Department of Plastic Surgery, Royal Free Hampstead NHS Trust

**M. D. Brough**

Department of Plastic Surgery, Royal Free Hampstead NHS Trust

**R. Standish**

Department of Histopathology, Royal Free Hampstead NHS Trust

**J. Humberson**

Department of Astronomy, University College London