

Case Report

Lightning Strike- An Environmental Hazard

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ABSTRACT

In 29 yrs period from 1980 to 2009 no post- mortem of deceased who died of lightning had been carried out in S.P. Medical College and associate group of Hospitals in Bikaner, Rajasthan. In 2010, 4 cases of lightning were brought dead in mortuary of PBM Hospital Bikaner. We describe the finding of these cases having singeing of hair, superficial burn and arborescent burn. We also discuss the probable causes of occurrence of such cases after lapse of 29yrs.

Keywords: Lightning, Cloud burst, Thunderstorm

INTRODUCTION

Literally lightning means discharge of atmospheric electricity accompanied by a vivid flash of light, commonly from one cloud to another, some times from cloud to earth. The sounds produced by electricity passing rapidly through atmosphere constitute thunder.

Lightning kills more people than other natural disasters such as floods, hurricanes and the tornados. However, just because lightning usually kills people one at a time, it tends to be an underrated hazard.¹

Considering accidental deaths that occur due to natural causes usually around 2000 people die every year because of lightning. Among the incidence of accidental death due to natural causes, maximum number of accidental deaths occur in India because of lightning, heat stroke, cold and exposure. 10.6% victims of accidental deaths attributable to nature were due to lightning².

During thunderstorm and lightning, the current strikes the ground directly, as in case of lightning which occurs on a large open field. But the current has a tendency to pass to the earth through a nearby structure of maximum height. This may be a pillar, a tree or a building. A person

taking shelter under a solitary tree during thunderstorm or a person on an open field is quite unsafe³.

CASE REPORT

From 1980 to 2009, i.e. in a period of 29 yrs no post-mortem of deceased who died of lightning had been carried out in S.P. Medical College and associate group of Hospitals in Bikaner. We enquired from our former professor and head and in reply they conveyed that they had not conducted post mortem on any case of lightning strike in Bikaner during their long tenure. However, they confirmed that they had heard about cases of death due to lightning strike in remote areas of Bikaner.

Surprisingly in 2010, 4 cases of lightning strike deaths were brought dead in mortuary of P.B.M. Hospital, Bikaner from near by villages of Bikaner.

Case No. 1: On 04/09/10 (PMR No. 444/10) post mortem was conducted on a deceased male of age 24yrs. The police informed that the person died of lightning while he was working in the field during rains. He was having a mobile in his trouser. Rigor mortis were

present all over body. The cloth of the pocket containing the mobile was burnt. He was having 1st degree burns on right lower limb with singeing of hair. Filigree burns were present on right thigh. (Photograph 1) On internal examination organs were found congested.



Photograph : 1 :- Showing first degree burns with singeing of hair (PMR No. 444/10)

Case No. 2:

On 12.09.2010 (PMR No -462/10, 463/10, 466/10) three deceased were brought dead by police with alleged cause of death as lightning. As per police the dead body was lying under a “Khejari” tree. At the scene there was one Indian cot, stove with unburnt firewood, utensils for preparation of tea and three out- of- order mobiles. All

the three were male of age 50 yrs, 22yrs and 16 yrs. Rigor mortis was present in all the cases all over body. All the cases showed Ist degree burns with singeing of hair on the chest, interior right side of the abdomen and right lower limb. Filigree burns were present in the deceased aged 16 yrs. (Photograph 2) On internal examination organs were found congested.



Photograph 2 : Showing filigree burns (PMR No. 466/10)

DISCUSSION AND CONCLUSION

In the years between 1980 to 2009, no post-mortem had been conducted on cases of lightning deaths. But 4 post mortem were conducted during the year 2010.

Bikaner experienced torrential rainfall during 2010. Monsoon is changing its mood in this region. The days of drizzle rains are getting less. The incidence of torrential rains and cloud burst are increasing. The distribution of rainfall has also changed.

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Chhattisgarh & Jharkhand are having less rainfall as compared to the past but it has increased markedly in Maharashtra.⁴

The torrential rains are thought to be due to global warming. Lightning, thunderstorm and torrential rains are hand in glove. Hence, the occurrence of these cases near Bikaner may be an indication of global warming.

Environmentalists and meteorology department should look into this phenomenon and think of necessary measures that can be taken to prevent lightning strikes. Villagers should be educated about the mechanism of lightning strikes and how to avoid lightning prone target or objects.

The findings of present cases are also consistent with the statement that a person taking shelter under a solitary tree during thunder storm or a person on an open field are quite unsafe. In the present series, 3 deaths occurred under a solitary tree and one death occurred while the victim was working in the field.³

Rigor mortis appears early in cases of deaths due to lightning. In all the 4 cases rigor mortis appeared earlier.

At the scene of the incidence mobile phones were present. Doctors in U.K. are saying that using a cell phone, I- pod or other portable electronic devices in thunderstorm could lead to lethal lightning strikes⁵. Injury from lightning strike while using mobile phone has also been reported by others⁶⁻⁹

Technically the lightning strike and mobile phone have no relation. Mobile phones are of low voltage and are low power instruments. If the cause of lightning is

mobile phone then the mobile tower or radio or TV antenna must be involved first. The occurrence of lightning and presence of mobile may be a coincidence¹⁰. However, in the present case the mobile phone can not be alleged as a reason for lightning strike as in all the cases under observation, the deceased were not using mobile phones at the time. However one can say mobile gets damaged after lightning strikes.

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