

# Lightning



# Objectives

- Students should be able to
- identify injuries due to lightning
- describe post mortem features of lightning

# Lightning stroke

Lightning stroke occurs from cloud to the earth through the nearest & tallest object



# Components liberated in lightning stroke

- 1) A massive current
- 2) Flash – fire effect
- 3) Blast effect



# Circumstances

- Sheltering under the tree
- Walking in the open space under umbrellas
- Inside a house using telephones, electrical appliances



# Effects of lightning

- High voltage current causes an immediate cardiopulmonary arrest



# Burns due to lightning

- Heated metallic object worn by the person
- Superficial linear fern like skin burns over the moist skin creases- Filigree burns





# Burns due to lightning

- Arborescent burns
- Superficial burns along blood vessels due to local erythema called ferning.





# Burns due to lightning

- Ignite cloths
- Charring of the body



# Effects of blast wave in lightning

- Tearing of clothing and foot wear
- Thrown away injuries, fractures, internal injuries
- Damage to lungs, intestine, eardrum due to compression and decompression

# Diagnosis of death from lightning

- History
  - History of thunder storm
- Evidence of lightning
  - Dead animals, damage trees and houses



# Diagnosis of death from lightning

- Melted or magnetized metallic objects
- Clothes burnt or torn
- Extensive injuries
- Typical Burns



# Postmortem findings

- Internal
  - Non specific
  - Congestion of organs
  - Petechial haemorrhages

# Causes of death

- Ventricular fibrillation
- Burns
- Injuries
- Delayed effects of burns and injuries

# Summary

- Component of lightning flash
  - Current
  - Flash-fire effect
  - Blast effect
- Effects of lightning
  - Burns
  - Blast injuries
- Diagnosis of death due to lightning



# Reference

- Pathology of trauma ,3<sup>rd</sup> ed.– Bernard Knight
  - Lecture notes on injuries – Dr L.B.L.de Alwis
  - Simpson's Forensic Medicine, 12<sup>th</sup> ed. – Richard Shepherd
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- Acknowledgement - Sources of images
  - Reference books
  - Google images
  - Doctor's who provide photographs to the Departmental collection of photographs

The background of the image is a dark, stormy sky with a deep blue color palette. Multiple bright, jagged lightning bolts are visible, with the most prominent one running vertically down the center. The bottom of the image shows a dark, calm body of water reflecting the light from the lightning. Overlaid on this scene is the text 'Thank you' in a large, bold, black font, tilted at an angle from the bottom left towards the top right.

**Thank you**