

CRANIAL TRAUMA

INTRACRANIAL HEMORRHAGE

- Epidural/extradural hemorrhage
- Subdural hemorrhage
- Subarachnoid hemorrhage
- Intra cerebral hemorrhage

EPIDURAL HEMORRHAGE

- Acute
- Sub acute
 - Bleeding between Dura and skull
 - Always traumatic
 - Usual site is Parietotemporal area
 - Never a contrecoup injury

ACUTE EPIDURAL HEMATOMA

- Rupture of middle meningeal artery

SUB ACUTE EPIDURAL HEMORRHAGE

- Dural sinus ,middle meningeal veins,diploic veins
- Slow onset
- Lucid interval
- Rapid resolution
 - No expansion of clot

MEDICOLEGAL IMPORTANCE

- Prognosis is good with treatment
- Lucid interval (negligence)
- Resemble drunkenness
- Heat hematoma

SUBDURAL HEMATOMA

- Cortical vessels/Dural sinuses
- Bridging or communicating veins

- Acute
 - Signs evident within 24 hours
- Sub acute
 - 24 hours -7 days
- Chronic
 - Develop after 7 days

ACUTE SUBDURAL HEMATOMA

- Cortical artery /large bridging veins
 - Mobile
- Poor prognosis

SUB ACUTE SUBDURAL HEMATOMA

- Small bridging veins

Sudden death in alcoholics

CHRONIC SUBDURAL HEMATOMA

- Slowly develop
- Encased in membranes
- Re bleeding through vascular channels
- Recent lesions
- Old hematoma

GROSS APPEARANCE

- Within few hours
- 10-12 days
- 2nd week
- More than 3 weeks
- After one month
- Cellular infiltration
- Dark red to brownish color
- Discrete surface membrane
- Liquefaction of contents
- Firm capsule –cystic cavity (dark brown watery fluid)

DATING OF SUBDURAL HEMATOMA

- Capillary dilatation
 - Proliferation of fibroblast
 - Thin layer of fibrin
 - (fibroblastic and capillary proliferation)
 - Red cell decomposition
 - Pseudo membrane
 - True inner membrane
 - appearance Connective tissue of mature
 - Mature connective tissue
- 1st 24 hours
 - 2-3 days
 - 4-5 days
 - 5-10 days
 - 2-4 weeks
 - After 4 weeks
 - 1-3 months

SUBARACHNOID HEMORRHAGE

- Natural causes/trauma
- Laceration of vital arteries
 - Internal carotid artery ,vertebral, basilar
- Natural causes

- Traumatic causes
 - Contusion/laceration
 - Explosive blast
 - Asphyxia
 - Fracture of cervical vertebra
 - Hyperextension of head during bronchoscopy
- Residual yellow brown staining of Pia /Arachnoid
 - Hemolysis turns CSF into xanthochromatic yellow

MEDICOLEGAL ASPECTS

- Ruptured berry aneurysm and trauma
- Subarachnoid hemorrhage and alcohol

Vertebral column and spinal cord

- Vulnerable areas

- Fracture of the spine
 - Difficult to detect
 - X-ray should be taken before autopsy

Spinal cord injuries

- Concussion
- Compression
- Pithing
- Laceration

Concussion

- Without external evidence of injury
 - Common form of injury in railway accidents and motor car collision
 - Railway spine

- Hyperextension is much more dangerous in causing spinal damage

- Momentary dislocation of c4-c6
- Contusion of spinal cord followed by self reduction
- At autopsy
 - Area of hemorrhagic discoloration on the surface or in the substance of the cord ,or subtheical effusion of the blood

- Blow on the spine
 - Edema
 - Venous thrombosis
 - Softening of cord

Compression of spinal cord

- Fracture /dislocation of spine
 - C4-c6
 - T3-T6
 - T10-L3

- Pithing

- Process of killing by small needle between

- base of skull and first cervical vertebra
 - 2nd and 3rd cervical vertebra

- Laceration
 - Without external injury especially in children
 - Twisting and dislocation
 - Firearms