

# CNS TRAUMA

## CONCUSSION

diffuse damage microscopic so not necessarily apparent in the moment (no immediate tissue damage evident)

- patho: blow to head that jars brain
  - temp neuro impairment
- assessment:
  - brief lapse of consciousness; disorientation
  - headache; emotional irritability
  - blurred/double vision; dizziness
- SIS: not adequately tx concussion could lead to second impact syndrome (SIS)
  - occurs when pt sustains **second** concussion before first heals properly.
  - repeat concussions can result in **rapid swelling** of brain → fatal
  - after experiencing concussion → **4x** more likely to experience another
    - **limit** activity! - sx worsen/re-emerge w/ exertion
    - return to activity → not experiencing sx for minimum **24 hrs**
- diagnostic:
  - skull radiography, CT, MRI
- med management:
  - temp physical/cognitive inactivity
- nurse considerations:
  - neuro assess; SIS ↑ ICP

## Cerebral Contusions

bruising + structural injury to brain  
→ could lead to hemorrhage

- patho: coup/contrecoup injury
  - coup: extension
  - contrecoup: flexion
- assessment:
  - hypotension
  - rapid, weak pulse
  - shallow resp
  - pale, clammy skin
  - temp amnesia
- diagnostic:
  - skull radiography, CT, MRI
- med management:
  - drug, mechanical ventilation
  - head injury prevention

## Skull Fractures

a break in the continuity of the cranium

→ results from blow to head + associated with:

- **open** head injury: scalp, cranium, dura
  - has potential for infection from exposure of internal brain structures
  - **less likely** to produce rapid ↑ ICP since opening causes room to expand as pressure increases
- **close** head injury: intact layer of scalp covers the fractured skull
- assessment: depend on area of brain
  - localized headache
  - bump, bruise, laceration, swelling may be visible on scalp
  - hemorrhage, shock, seizure may develop
- diagnostic: skull radiography, CT, MRI
- med management:
  - simple: bed rest, observation ↑ ICP
  - lacerated: wound cleaned + sutured
  - depressed: **craniotomy** to remove bone fragments
    - control bleeding; **elevation** of fracture
      - piece of **mesh** is inserted to place fragments removed
- nursing management:
  - hospitalized at least 24 hours
  - drainage from nose or ear - to detect **CSF** drainage: nurse will look for halo sign
    - blood stain surrounded by clear/yellow stain → if present: allow to fall freely onto **gaze** + avoid tightly plugging opening

• VS: 15-30 mins; LOC: hourly

• ICE/COLD PACK