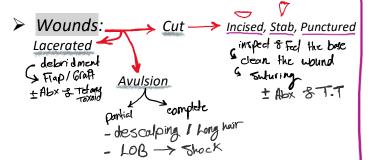
### 2. CRANIO-CEREBRAL INJURIES

- 3<sup>rd</sup> cause of death
- TYPE.  $\Rightarrow$  Closed, penetrating and missile.  $\rightarrow$  o Scalp. o Skull o Brain

#### A. Primary events

#### SCALP injury 1. 1 tend to Bleed

- Abrasion: cleansing & abx cream.
- **Contusions:** swelling... Analgesia & cold compresses



## **Hematomas**

	<b>K</b> _	
	Subgaleal H.	Subpericranial H.
cause	Perinatalvacum Emissary veins are torn	Perinatalvacum Emissary veins are torn
Features	soft and boggy, cross suture & midline extensive	limited in size, can't cross suture line or midline Firm, skin move freely over it.
Mana yem.	Tight bandaging& analgesia Watch Hb level !! -NEVER try to aspirate blood Risk of infx/ meningitis ↩	. Compressive dressing later : shaved & see the wound for foreign body & feel for depressed & suturing then dressing & antibx
infant < 0.5 h of Blood  so 1 Risk of hypor. Shock		

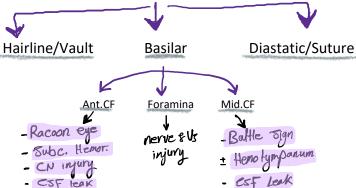
3. Brain Injury

.... mechanism of injury:

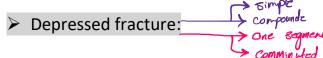


#### Linear fracture:

-No significance unless it's complicated / hematomas



Admit. for observation, deteriorate? do CT to rule out hematoma Basal fx: covered by abx & observe for CSF leak /ear+nose



-Operation?

Cosmetic

Thickness >adj bone Compound With Seizure With ND Important Area

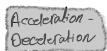
> cravioplesty/ charicetomy.

## pond fracture:

- Should't be touched.
- They will correct spontaneously.



- at the Site of impact Laceration or confusion in type
- as pendraling injury



- in the poles Fit

- confusion in type
- \_ Striks against station-object



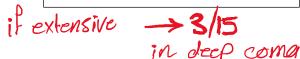
- Thearing Force

- Bad owtcome

CATEGORIES AND TYPES OF INJURY

- a) Mild, (GCS 14-15).
- b) Moderate (GCS (9-13).
- c) Severe (GCS =<8)





- Types of brain injuries:

1) Concussion.

- -the mildest
- -No damage/ grossly
- -brief LOC.

o observe for 24 hrs

2) Contusions.

3) lacerations.

- They make a large proportion of brain.
- at the site of injury/poles
- acce- dec injury.

- complicated: hemorrhagic..,intraaxial. Intracerebellar, + brain edema

steroids, Diuretics, Anticonvulsant

- 4) Diffuse axonal injury (DAI
- shearing forces
- pt with very low GCS and a normal CT & ICP & axonal spheroids In microsc.

• Like 283 + Icp monitor + ventilation

#### MANAGEMENT OF CLOSED HEAD INJURIES

practical guidelines to follow:

- · ABC. → Bp, IV line -> Avoid Shock &
- Full neurological examination.
- General examination ? / trauma patients
- Skull x-rays & cervical spine x-rays.
- Non-enhanced CT / bonewindow.
- · Admission.

# MANAGEMENT OF **MODERATE & SEVERE** BRAIN INJURIES:

- A high-risk category.
- Typically are patients suffer from contusions, lacerations and DIAs.
- Require non-contrasted CT & admission.
- Increase of the ICP and the possibility of secondary events / complications.
- Be attentive to ABC
- GCS 9-13 admission to ICU >> to check GCS & neurological status, IV line, Foley's catheter, electrolyte profile.

If they need surgery — Head elevated 30 degrees headache — Codeine phosphate

Mannitol — to buy time before surgery

I's given guided

The ICP > 20 and

- GCS 3 -8 ICU, ventilation, ICP monitor, Mannitol, sedation with barbiturate/propofol/ hypothermia.
  - Surgery?
     expanding hematomas, enlarging contusions or high ICP craniotomy to evacuate hematomas, excise contused brain parts, or craniectomies to relieve pressure in edematous brain

## MANAGEMENT OF MILD BRAIN INJURIES:

- Typically are patients with "concussion"
- Divided into I- V grades, depending on the presence of LOC, amnesia (ante or retrograde), and the duration of these.
- low risk no treatment
- headache analgesia / NSAID
- discharged home —with a competent caretaker & observe the patient regularly and report back to the hospital if the patient have (headache or vomiting or epileptic or deterioration of LOC.
- continue to complain of headache or vomiting / taking alcohol
   CT before discharging.

## **INDICATIONS FOR CT**

- Patients below 5 and over 65 years of age
- In case of drug and alcohol consumption
- Concussion more than 5 minutes
- Amnesia more than 5 minutes
- Glasgow coma score (GCS) of 14 & helow
- Abnormal neurological signs
- The presence of skull fractures
- The presence of CSF leak
- The presence of epilepsy
- Abnormal skull x-rays

## <u>INDICATIONS FOR ADMISSIONS</u>

- Patients below 5 & over 65 years of age
- In case of drug & alcohol consumption
- Concussion more than 5 minutes
- Amnesia more than 5 minutes
- Glasgow coma score (GCS) of 14 & below
- Abnormal neurological signs
- In multi trauma
- Patients with co morbidity
- The presence of skull fractures
- The presence of CSF leak
- The presence of epilepsy
- Abnormal CT scan