OVERVIEW

1. How long do I need to observe?
2. When do I need to transfer?
3. What do I do if I get a severe head injury?

Initial Presentation

- Rural Hospital
- No CT available
- Brief loss of consciousness
- Some anterograde amnesia
- Bit of a bump on head
- But GCS 15
- No neurological deficit

Does he need transfer?

- Most likely not.

How long do I need to observe him?

- If stable 4 hours.

Daredevil

Rural Hospital
No CT available
Brief loss of consciousness
Some anterograde amnesia
Bit of a bump on head
But GCS 15
No neurological deficit

Does he need transfer?

- Most likely not.

How long do I need to observe him?

- If stable 4 hours.
What would make me want to transfer him?

- GCS <15 at 2 hours
- Abnormal pupils
- Focal neurological signs
- Persistent headache or vomiting

Our boy suddenly deteriorates

- Decreased level of consciousness
- Eyes open to pain
- Confused
- Withdraws to pain

Glasgow Coma Score

Eye Opening
- 4 Spontaneously
- 3 To speech
- 2 To pain
- 1 None

Verbal
- 5 Orientated
- 4 Confused
- 3 Words
- 2 Incomprehensible sounds
- 1 None

Motor
- 6 Obeys commands
- 5 Localises pain
- 4 Withdraws
- 3 Flexion
- 2 Extension
- 1 None

Further Management

1. Prevent secondary brain injury
2. Organise transfer

Prevent Secondary Brain Injury

- Oxygenate
- Avoid hypercapnoea
- Maintain MAP>90-100
- Avoid anaemia

Airway & Breathing

- Ensure patent airway
- High flow oxygen
- Intubate if GCS <8
- Keep PCO2 35mmHg
Circulation
- 2 large bore cannulas
- Maintain Mean Arterial Pressure (MAP) >90mmHg
- Fluid boluses
- Inotropes

Circulation
- Different to other trauma scenarios
- Trend towards hypotensive resuscitation keeping systolic BP <90

Why maintain high MAP
- Head injury leads to raised intracranial pressure (ICP)
- Cerebral Perfusion Pressure = MAP - ICP

Where should he be transferred?
- Base Hospital or Tertiary Hospital

Other treatment
- Mannitol
  - In consultation with neurosurgeons
  - 1g/kg rapidly
  - Comes in 500ml bag of 20% Mannitol
  - 500ml = 100g
- 30 degrees head up

Other treatment
- ? Steroids
- ? Anticonvulsants
What happens to our boy?

**Initial Management of Adult Mild Head Injury**

Institute for Trauma and Injury Management (ITIM) Guideline

**Initial Management of Adult Closed Head Injuries**

Institute for Trauma and Injury Management (ITIM) Guideline

**Summary**

- Close clinical observation for mild head injury
- Rapid transfer and prevention of secondary brain injury for moderate and severe head injury

**Questions**