Trauma Scenario 1 Refresher Course

This is a Teaching Scenario. Some flexibility in how it progresses is possible according to individual learner needs

History {initial candidate briefing prior to arrival of child}

A 5 year old boy ran out in front of a car. It swerved, but still hit him. He was thrown to the ground unconscious and has not woken up since. He was brought to hospital by ambulance. Estimated weight 20 kg.

Initial impression {provide information as candidate assesses child and applies monitoring}

Unconscious, flexes to pain, blood in hair, from right ear, and on right lower leg. Cervical collar in place. Gurgling when breathing. SpO_2 92% in air. HR 130, RR 30, CRT <2, BP 100/65. Pelvic binder in situ.

Clinical Course {to be given to candidate as they progress}

Remains unconscious, when candidate checks the pupils, the right is dilated. The airway remains partially obstructed until suction and insertion of an oropharyngeal airway. Intubation is necessary to secure the airway and control CO_2, oxygenation and manage ICP. Also requires intubation for urgent CT and transfer.

INSTRUCTORS INFORMATION

Key Treatment Points ☑

<C>	Assess for and control external bleeding	
Airway & C-spine	Establish airway patency/suction /OPA	
	Protect cervical spine	
	High flow O2 via face mask commenced early Titrate O2 therapy to SpO2 94-98% when stable	
Breathing	Arrange for urgent intubation and ventilation with $ETCO_2$ monitoring	
Circulation	Early IV access with 2 wide-bore cannula	
	Blood for cross-match etc	
General Therapy	Urgent head CT Consideration of other measures to maintain cerebral perfusion, and prevention of secondary neurological injury Urgent Neurosurgical consultation	

Diagnosis: Head injury with right parietal skull fracture and extradural haematoma. Fractured C3/4. Fractured right tibia and fibula

Learning objectives

At the end of this session participants should be able to:

- Apply the structured approach to assessment, management and diagnosis of traumatic brain injury, cervical spine injury and trauma
- Recall and consider the application of management of traumatic brain injury in their own practice
- Recall and consider the application of potential spinal cord injury management in their own practice

Potential Issues to be Discussed, instructor resources

- Measures to increase cerebral perfusion and decrease ICP temporarily
    - Nurse in the 20° head-up position and head in midline to help venous drainage
    - Ventilation to achieve a $PaCO_2$ of 30–34 mmHg (short term intervention)
    - Infusion of intravenous mannitol 0.25–0.5 g/kg or 3% hypertonic saline (3 ml/kg)
    - Combat hypotension if present with crystalloid/blood infusion and inotropes if necessary
- Cervical spine injury is commonly associated with head injury, although iatrogenic SCI is unlikely with appropriate spinal precautions
- Spinal precautions should be maintained throughout clinical management and requires clearance by appropriate imaging e,g, MRI

Cervical spine assessment - Guideline endorsed by Paediatric Improvement Collaborative
https://www.rch.org.au/clinicalguide/guideline_index/cervical_spine_assessment/