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Healthcare

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GUIDELINES FOR MANAGEMENT OF HEAD INJURY



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Indications for admission

1. All patients in coma/ altered sensorium
2. Compound head injury (exposed brain/CSF leak or CSF rhinorrhea or pneumocephalous on X-ray/CT)
3. Compound skull fractures
4. H/O loss of consciousness / seizures/ repeated vomiting/severe Headache
5. All unknown patients (picked up from roadside – check personal belongings for identification. Inform MS before admission).GCS cannot be assessed (alcohol or other intoxication)
6. Patients with doubtful history and no attendants



Divided into 5 parts :

- a) General assessment
- b) Information dissemination
- c) Initial treatment
- d) Investigations
- e) Documentation
- f) Patient transfer



1. Check airway and respiration. SPO2. Clear airway if reqd.
2. Vital parameters – pulse, BP, resp
3. Apply cervical collar (Spondylosis collar – MGRM)
4. Neurological assessment: GCS, Pupillary reaction, focal
5. neurological deficit, spine examination (only active movements)
6. Examine chest, abdomen, pelvis and long bones



Information dissemination

1. Inform neurosurgeon and carry out part C and D in consultation
2. Inform anaesthesiologist/ intensivist in ICU





Initial treatment

1. Start IV access with 2 lines on one upper limb (Lt preferably, keeping Rt for CVP line by anaesthesiologist/intensivist)
2. Draw blood for hemogram, sugar, electrolytes, RFT, blood grouping, LFT, coagulation profile
3. Parenteral analgesia (Inj Diclofenac Sod) for pain relief , esp. if ass. long bone fractures.
4. Splint fractures to reduce pain
5. Catheterize patient





6. Drug herapy:

- a) Mannitol 0.25 -0.5 gm /kg wt over 10 mins IV
 - b) IV Dilantin 15 mg/kg body weight slowly at rate of 50 mg/min
 - c) Antibiotics (Cefotaxime + Amikacin) in case of compound head trauma
 - d) IV Emeset in case of vomiting
 - e) IV Pantocid 40 mg
7. Ryles tube to be passed in all severe head injury. In case of nasal bleed, do not pass nasal tube





Investigations

1. NCCT head (patient can be sedated if restless)
2. X-ray cervical spine
3. X –ray chest
4. Any other X-rays as clinically indicated



Documentation

Documentation is as important as management since majority are medicolegal. However should be done only after patient is stable and admitted. Brief notes on vital parameters may be made to help.

1. MLC – most cases are of medicolegal nature and after documentation, the police must be informed. Enter the following info. in the MLC register:
 - a) Time info given to police
 - b) Name of constable
 - c) MLC number



Patient transfer

Whenever an intubated patient is transferred within the facility (example, for CT) or between facilities, the following must be available:

1. Anesthesiologist and one nurse must accompany
2. Patient should be on portable ventilator
3. Monitoring of heart rate, oxygen saturation and NIBP
4. Resuscitation tray, ambu bag and oxygen cylinder





Glasgow Coma Scale

E4 – eyes open spontaneously

E3 – eyes open on command

E2 – eyes open to painful stimuli

E1 – eyes do not open

(Ec – eyes closed (taped or because of marked periorbital edema))

V5 – oriented

V4 – disoriented

V3 - inappropriate words

V2 – incomprehensible sounds

V1 – no sounds

(Vet /Vtr – endotracheal tube/tracheostomy)





Glasgow Coma Scale Contd....

M6 – following commands

M5 – localizes pain

M4 – flexion to pain/withdrawal

M3 – abnormal flexion

M2 – extension to pain (decerebration)

M1 – no response

(Mp – motor response cannot be assessed as patient is paralyzed)





Limitations

1. Gives no information on pupillary status
2. Gives no information on focal neurological deficit





GCS cannot be assessed

1. In children
2. In presence of shock/ hypoxia/hypothermia
3. Inpatients with coma due to metabolic causes
4. In patients with alcohol or other intoxication





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Score 8 and below: Severe head injury

Score 9-12 : Moderate head injury

Score 13-15 : Minor head injury



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Shock in Head Injury

Shock is rarely seen in head injury and usually implies major trauma elsewhere such as chest injury /abdominal injury, major long bone fractures or associated cervical spine injury with quadriplegia.

In head injury, if shock occurs there is usually an obvious source of major bleeding such as extensive skull lacerations or profuse bleeding from skull base associated with fractures and manifesting as nasal bleed. We must remember that young children can have shock even with small scalp lacerations.

It is reiterated that usually severe abdominal /chest trauma producing shock takes precedence in management over the head injury.





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Deterioration in patient's neurological status after admission/ after receiving from OT

Whenever a patient is received from casualty or from OT after cranial surgery, detailed neurological examination must be made and recorded. If different from admission notes, inform immediately. An immediate assessment is vital as only then can we pick up neurological worsening.

The causes of deterioration in the head injury patient/ postoperative patient are:

1. The underlying pathology
2. Post operative hematoma
3. Hypoxia
4. Seizure
5. High grade temperature
6. Electrolyte disturbances



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THANK YOU