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•Trauma

- Epidemiology

- Trauma remains the most common cause of death for all individuals between the ages of 1 and 44 years.

- The third most common cause of death regardless of age.

- **Initial Assessment**
- Must quickly identify & treat immediately life threatening injuries.

- The initial treatment of seriously injured patients consists of
  Primary survey
  Resuscitation
  Secondary survey
  Diagnostic evaluation
  Definitive care

• ATLS

Advanced Trauma Life Support (ATLS) course of the American College of Surgeons Committee on Trauma is directed at primary care physicians in rural communities.

- Primary Survey
  A , B ,C ,D ,E
-

1- Airway + C-collar

If the patient conscious and normal voice , no further evaluation of the airway.

- ASSUME there is cervical spine fracture till proved otherwise.

- HARD NECK COLLAR ALONE IS NOT SUFFICIENT Adhesive Tape.
- Sand bags at sides of the head.
- OR a person holding the head.

- The most common cause of intubation is **altered mental status**.

- Signs and symptoms of airway compromise

- High index of suspicion
- Change in voice / sore throat
- Noisy breathing (snoring and stridor)
- Dyspnea and agitation.

- Tachypnea

- Airway Management

  Supplemental oxygen

  Basic techniques

  Basic adjuncts

  Definitive airway

- Airway Management
- Basic techniques

(reopen airway &help restore satisfactory oxygenation and breathing)

chin-lift

jaw-thrust

suction

- Airway Management

Basic adjuncts

Oropharyngeal airway

Patients who can tolerate an oral airway will usually need intubation.

Nasopharyngeal airway

Often well tolerated

- Definitive airway

Orotracheal Intubation

- Cricothyroidotomy

- **2- Breathing**

- All patients should receive

O2
+pulse oximetry.

- Life –threatening conditions

- Tension Pneumothorax.
- Open Pneumothorax.
- Flail chest & pulmonary contusion.
- Massive hemothorax.
- Cardiac temponade.

- Tension Peumothorx

Respiratory distress +one of the following:

-Tracheal deviation.

-Decrease breath sound.

-Distended neck veins.

-Subcutanous emphysema.
-Mediastinal shift.
-Hyperresonant.
-Increase PR & RR.
-Hypotension.

Rx :chest decompression + tube thoracostomy.

- The lung continues to leak air into the chest cavity and results in compression of the chest structures, including vessels that return blood to the heart.
- Open Peumothorax

- Do not close the wound because it will convert into Tension Penumothorax.
- Rx in the field: occlusive dressing.
- Proper Rx: wound closure+ tube thoracostomy
- Flail chest
- ≥ 2 ribs fractures in at least 2 locations.
- Pulmonary contusion with or without ribs fractures may compromise oxygenation,
  ventilation.

- Rx
- Adequate oxygenation, ventilation and pulmonary toilet.

To prevent the development of pneumonia, which is the most common complication of chest wall injury.

- Analgesia is the mainstay of therapy for rib fractures.

- Opioid analgesic.
- PCA.
- The best analgesia for a severe chest wall injury is a continuous epidural infusion of a local anaesthetic agent (+/- an opioid).
- Local anaesthetic is infiltrated around the intercostal nerve posteriorly.

- **?Rib fracture fixation.**
- **3- Circulation**
- Manual compression.

- Avoid blind clamping because of risk injury to other structures e.g. nerves

- **Circulation**
- 2large IV lines

- Initial fluid Resuscitation
- Adult 1L NS, RL.
- Child 20 mg /kg RL.

Repeat in adults 1x
& in pediatrics 2x

- **4- Disability**
  - Rapid neurological evaluation .
  - Check

    level of consciousness.
    Pupillary size and reaction.
- **5- Exposure/Environmental Control**
  - The patient should be completely undressed & fully exposed for examination.

- Cover with warm blankets.

- Warm IV Fluids.

- Warm environment.

- Adjuncts to Primary survey
- NGT
- CXR , Lateral neck X-ray , Pelvis X-ray.
- Urinary catherization.
- ABG.
- …

- DECOMPRESS URINARY BLADDER.

- MONITOR URINE OUT-PUT
- IF there are
  Blood at meatus
  Blood in scrotum
  High prostate in rectal ex.

DO ASCENDING (RETROGRADE) URETHROGRAM--SUPRAPUBIC CATHETER

- Urine output
- In adult 0.5ml /kg per hour.

- In children 1ml /kg per hour.

- In infant 2 ml /kg per hour.

- Shock
- Global tissue hypoxia.

- Occurs when either the supply of or the ability to use oxygen and other nutrients is insufficient to meet metabolic demands.
- **Pathophysiology of shock**
- MAP is directly proportional to CO and SVR.

- CO = Stroke volume(SV)*Heart rate(HR)

- SV is directly proportional to preload, afterload, and myocardial contractility.

- MAP is directly proportional to heart rate, preload, afterload, and contractility.

- Compensatory changes in response to systemic hypotension include the release of catecholamines, aldosterone, renin, and cortisol, which act in concert

to increase heart rate, preload, afterload, and contractility

- **Hypovolemic Shock**
- control of ongoing volume loss and restoration of intravascular volume.

Causes:-

Hemorrhage . (Commonest cause of shock in polytrauma)
Severe inflammation or infection.
Trauma.
Burns.
Vomiting.
Excessive Diuresis.

- Symptoms and signs
- Pallor.
- Cool , moist skin.
- Hypotension.
- Tachycardia.
- Restless.
- Oliguria/anuria.
- Coma, cardiac arrhythmias and cardiac arrest (in sever shock).
- Management
  - Adequate airway.
  - 100% O2.
  - Elevate the foot.
  - IV lines (IV fluids , blood transfusion).
  - Urinary catheter.

- Definitive Rx.

- **Secondary Survey**

Head to toe evaluation

(Complete Physical Examination)

- **Score 3 : severe injury with poor prognosis**
  Score 13-15 : minor injury with good prognosis

- Imaging and other diagnostic aids
  - X-ray.
  - Ct scan.
  - FAST.
  - DPL.

- Neck

****3 veiws of C-spine series**

-AP.

-Lateral.

-Transoral odontoid.

- CXR
- ?
- ??
- Normal pelvic X-ray
- ?
- Epidural hematoma

- BLOOD between skull & dura.

- Biconvex shape(ثنائي التحدب)

- Disruption of middle meningeal artery.
- Subdural hematoma

- BLOOD between dura & cortex.

- Venous disruption or laceration of brain parenchyma.
- Crescent shape.
- Prognsis is poor.