

# Chest trauma

1-blunt 🚗 2- penetrating ( stabbing , gunshot ) 🗡️ 🔫

## Rib fractures

2nd Most common thoracic injury > result from blunt trauma

## Management

Admission , ventilation

Simple : by narcotics and intercostal nerve block > to improve ventilation

First rib fracture > significant injury > aortography

## Pulmonary contusion

Most common thoracic injury

Interstitial and intra alveolar hemorrhage

First day , no thing

2nd or 3rd day > hazzy opacities on CXR

Management : conservative/ ventilation, central line with fluid , ICU admission from the first day

## Flail Chest

High mortality rate , from direct blunt trauma

More than 2 ribs fractures in 2 different sites at least > Paradoxical Respiration (inward movement in inspiration, and outward in expiration)

Clinical diagnosis : bruising and seat belt sign , crepitus

Management : O<sub>2</sub> , pain control , bed rest , deep breathing, secretion removal > intubation > rib fixation surgery

## Pneumothorax

Open : no shift

tension : tracheal deviation to the unaffected side + hypotension + Air move in

Clinical diagnosis

spontaneous : bleb rupture and air accumulation under skin

Management : stable : O<sub>2</sub> and 18-20 bore chest tube directed toward the apex under water seal // unstable: needle decompression

## Hemothorax

Simple <1500 ml

Massive >1500 ml (possible thoracotomy)

Dx by CXR , CT

Management : 32 bore chest tube to evacuate blood ( mid axillary line , above 5th rib , behind pectoralis major directed toward the base , underwater seal blunt open technique )

## Diaphragm rupture

Usually from blunt trauma (RTA , falling down)

Left > right , rarely occurs in isolation

Stomach herniates > collapse lung > shifting of mediastinum also stomach perforation can happen

Diagnosis :CXR can be normal in 35%

CT , most accurate

Management :Urgent surgery (laparotomy or thoracotomy)

## 📍 Cardiac injury 📍

RV>LV>RA>LA

VSD > most common intra cardiac injury

## Cardiac tamponade

Hypotension , distended neck veins , muffled heart sounds , low QRS voltage

Management: Subxiphoid pericardiocentesis ( done in OR)

For rapidly deteriorated pt : EDT🌟 (Anteriolateral )

*Median sternotomy is the preferred approach*

## Myocardial contusion

Cardiac enzymes, ECG , heparin , antiarrhythmic drugs

Management same as MI ( ICU admission ) , surgical repair ▼ coronary artery injury(bypass or cross clamping) ▼ventricular injury(suturing)

## 📍 Great vessels injury 📍

90% die before reaching ER , M.C site :ismuth of aorta ( distal to subcalvian )

Management : cath (cover stent) , thoracotomy

Aortography indication:

First rib fractures

brachial plexus deficit

absent radial pulse

pulsating supraclavicular mass

widened mediastinum

Endotracheal intubation indication:

apnea RR >30

profound shock,

inadequate ventilation PaO2<60

PaCO2 >45

### Indications of Thoracotomy

#### Acute indications

- ✘ Cardiac tamponade
- ✘ Acute hemodynamic deterioration/cardiac arrest in the trauma center
- ✘ Penetrating truncal trauma (resuscitative thoracotomy)
- Vascular injury at the thoracic outlet
- Loss of chest wall substance
- Massive air leak دفع في مفاصله
- Endoscopic or radiographic evidence of significant tracheal or bronchial injury

O2sat >94

BP <110