

Trauma

Lec. 1

1st course

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DEFINITION

- ⦿ A traumatic event is one in which a person experiences (witnesses or is confronted with):
 - ⦿ Actual or threatened death
 - ⦿ Serious injury
 - ⦿ Threat to the physical integrity of self or another

Mechanism Of Injury



BLUNT TRAUMA

- ⊙ MVC
- ⊙ Pedestrian vs. Vehicle
- ⊙ Falls

Blunt Trauma: MVC

18

This horizontally oriented skull fracture was a result of a side impact when the side of the driver's head impacted a tree as the vehicle slid to a stop against the tree.



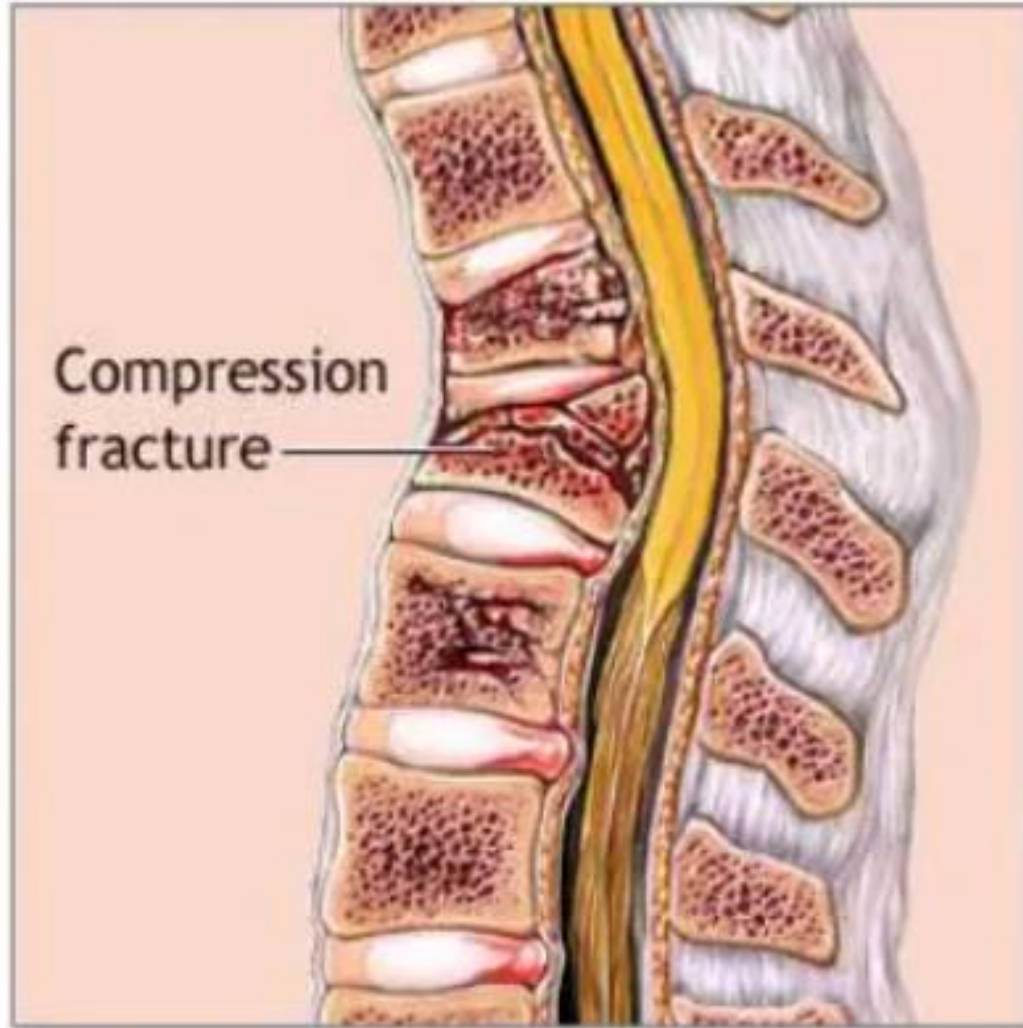
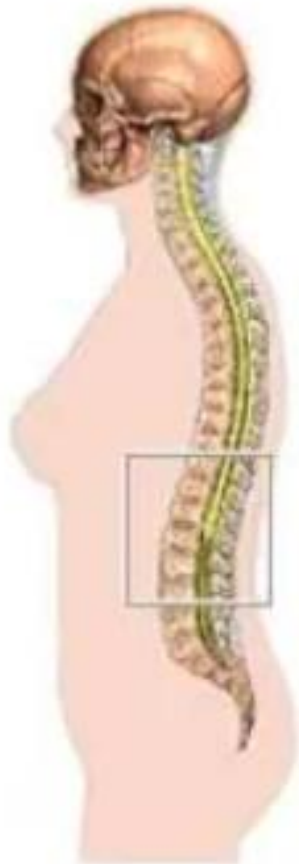
Blunt Trauma to the Chest



SPECIAL SITUATIONS

- ⦿ Explosions
- ⦿ Blunt + penetrating + burns
- ⦿ Burns
- ⦿ Crush injuries
- ⦿ Drowning
- ⦿ Hypothermia/





Compression
fracture

COMPRESSION INJURY

- ⦿ Frontal brain contusion
- Pneumothorax
- Rupture of Left hemi diaphragm
- Small bowel rupture
- Chance fracture

Acceleration - Deceleration Brain Injury



ACCE-DECELERATION INJURY

- ⊙ Aortic tear
 - Fixed descending aorta
- ⊙ Acute subdural brain hematoma
- ⊙ Kidney avulsion
- ⊙ Splenic pedicle

PENETRATING TRAUMA

- ◉ Gunshot wounds
- ◉ Stab wounds
- ◉ Impalement



CLASSIFICATION



MAJOR TRAUMA

- Major trauma is any injury that has the potential to cause prolonged disability or death.

MINOR TRAUMA

- ⦿ “Minor injury” means an employment injury or an occupational disease for which first aid or medical treatment is provided and excludes a disabling injury.

HOW CAN U CLASSIFY THE TRAUMA?

- Injuries generally are classified by either
 - ◆ severity,
 - ◆ The location of damage, or a combination of both.
 - ◆ Demographic group, such as *age* or *gender*.
 - ◆ Type of force applied to the body, such as *blunt trauma* or *penetrating trauma*.
 - ◆ Major trauma sometimes is classified by body area; injuries affecting *40% are polytrauma, 30% head injuries, 20% chest trauma, 10%, abdominal trauma, and 2%, extremity trauma.*

PATHOPHYSIOLOGY

Blood loss



Decreased IV volume



Decreased venous return



Decrease stroke volume



Decrease cardiac output



Reduce blood pressure



Hypo perfusion of tissue
(Tissue hypoxia)



Multiple organ damages

SIGN AND SYMPTOMS

◉ Some major sign and symptoms are :-

- ◉ Tachycardia
- ◉ Hypotensive
- ◉ Narrow pulse pressure
 - ◉ Cold peripheries
 - ◉ Shock

◉ Compensatory mechanism

- Increase SVR
- Increase HR
- Preserve CO/BP

MANAGEMENT

- History collection

 - A = Allergies.

 - M = Medication currently used.

 - P = Past illnesses/Pregnancy.

 - L = Last meal.

 - E = Events/Environment related to injury

Physical examination

- Lap belt marks: Correlate with small intestine rupture
- Steering wheel-shaped contusions
- Ecchymoses involving the flanks (*Grey Turner sign*) or the umbilicus (*Cullen sign*): Indicates retroperitoneal hemorrhage, but is usually delayed for several hours to days
- Abdominal distention
- Auscultation of bowel sounds in the thorax: May indicate a diaphragmatic injury

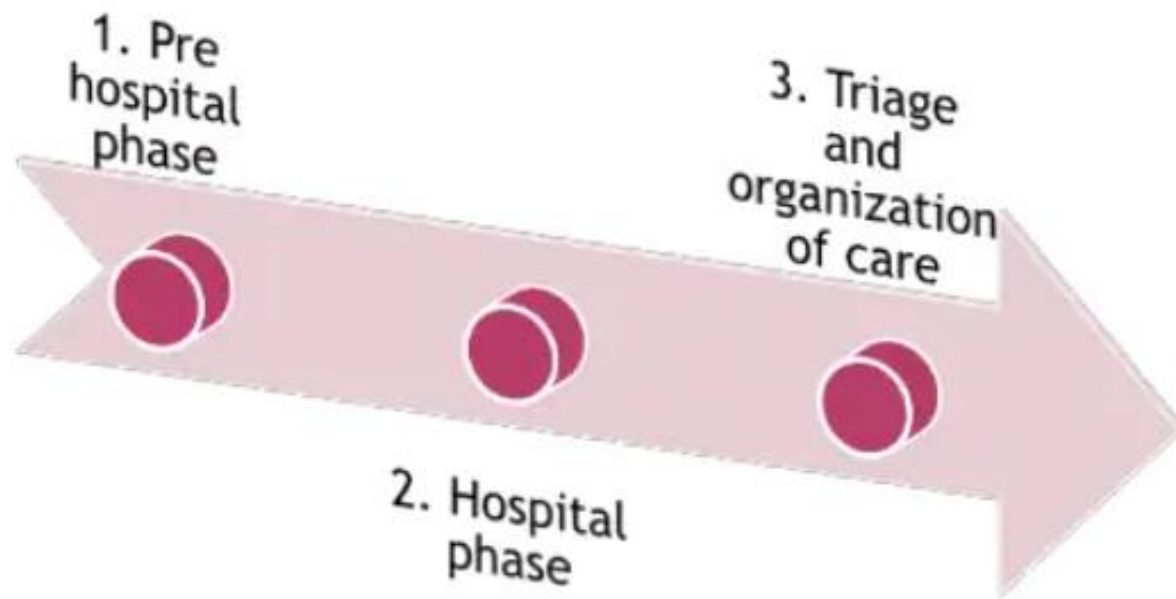
- ⦿ Abdominal bruit: May indicate underlying vascular disease or traumatic arteriovenous fistula
- ⦿ Local or generalized tenderness, guarding, rigidity, or rebound tenderness: Suggests peritoneal injury
- ⦿ Fullness and doughy consistency on palpation: May indicate intra-abdominal hemorrhage

- Crepitation or instability of the lower thoracic cage: Indicates the potential for Splenic or hepatic injuries

INVESTIGATION

- ⦿ complete blood count (CBC)
- ⦿ arterial blood gases (ABGs)
- ⦿ urine pregnancy test (for females of childbearing age).
- ⦿ Radiographic studies

TRAUMA ASSESSMENT



Preparation and Triage

Pre-Hospital phase

Pre-hospital agency co-ordination

Call on emergency number

Mobilizes the trauma team to ED

Hospital phase

Advance planning

Saves time

TRIAGE AND ORGANIZATION OF CARE

- ◉ **Priority 1 (P1) or Triage 1 (T1):** immediate care needed - requires immediate life-saving intervention. **Color code red.**
- ◉ **P2 or T2:** intermediate or urgent care needed - requires significant intervention within two to four hours. **Color code yellow.**
- ◉ **P3 or T3:** delayed care - needs medical treatment, but this can safely be delayed. **Color code green.**
- ◉ **Dead** is a fourth classification and is important to prevent the expenditure of limited resources on those who are beyond help. **Color code black.**

MANAGEMENT

- ATLS management

A: Airway with cervical spine protection



B: Breathing (ventilation and oxygenation)



C: CIRCULATION with hemorrhage control





D: Disability



E: Environment

(completely undress the patient but prevent hypothermia)

NURSING DIAGNOSIS

- ◉ Fluid volume deficit related to active body fluid loss secondary to bleeding from open wound
- ◉ Acute pain related to traumatic injury
- ◉ Risk of infection related to open wound
- ◉ Impaired mobility related to fracture.

Thank you!

