Axial skeletal injuries

Fracture pelvis

Pelvic ring
Concise of Pelvic fracture

1. Posterior sacroiliac ligament
2. SI joint
3. Massive bleeding
4. External fixator/pelvic clamp

Open fracture pelvis

1. 50% mortality rate
2. Tear bladder & urethra
3. Tear rectum

Open fracture pelvis is a fatal condition. Which physical examination is mandatory?

1. Pelvic compression test for fracture stability
2. Abdominal palpation to rule out visceral organ rupture
3. PR to rule out urethral rupture
4. PR to rule out rectal tear

Quiz

Fracture pelvis with suspected rupture urethra. What should you do?

1. Retained Foley’s cath
2. Surgery for fracture fixation and repair urethra
3. Retrograde cysto-urethrogram
4. IVP and voiding cysto-urethrogram

Cervical spine injury
CASE STUDY

A young man experienced a motorcycle accident for 2 hours. He was in good consciousness but could not move his arms and legs.

SPINAL SHOCK

State of lumbar and sacral areflexia

What is determined the ending of spinal shock?

- Bulbocavernous reflex
- Anal wink
Fracture C-spine

*Indirect injury*

**Hints**
- Unconsciousness (coma, intoxication, alcohol drinking)
- Head & facial injuries
- Multiple trauma
- Neck pain & limited motion
- Neuro. deficit (root, cord)
- X-ray: pre-vertebral fascia thickening

**Classification**

*Mechanism of injury*

- Flexion
- Flexion-rotation
- Extension
- Axial compression
- Shear

**Holdsworth**
What is the initial treatment?

Immobilization with skull tong
Gardner-Wells tong

Do you prefer to reduce the cervical fracture?
Weight for cervical traction (kg.)

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Why must we reduce the dislocation as soon as possible?

1. To save root
2. To promote blood supply
Pathology of spinal cord in SCI

Why must we reduce the dislocation as soon as possible?

1. To save root
2. To promote blood supply
3. To decompress the spinal canal

Space available for cord (SAC)

Spinal cord occupied only 35% of cross-sectional area in C-spine and 50% in thoracic spine

Anatomical consideration

- Thoracic spinal canal: narrow T1-10
- Spinal cord occupied 50-60%
Laminectomy is contraindication in cervical fracture

Spinal cord injury

3 day
Pathophysiology of SCI

Surgical treatment
- Midline myelotomy
- Rhizotomy

Non-surgical treatment
- Hypothermal
- Urea
- Hyperbaric oxygen
- Steroid
Cervical trauma with incomplete cord syndrome

Most common is central cord syndrome

Best prognosis is Brown Sequard syndrome

Tips

Extension distraction

central cord syndrome
Initial management for cervical injury

- Immobilization
- Medical stabilization
- Restore spinal alignment

Upper cervical trauma

Jefferson fracture

Pediatric spine X-ray
SCI in spinal shock developed hypotension, BP 70/40, PR 74, good consciousness. What should you do?

1. Fluid resuscitation with colloid.
2. Fluid resuscitation with crystalloid.
4. IV vasopressor.

Neurogenic shock
SCI quadriplegia for 3 mo. developed hypertension, BP 190/120, PR 42, flushing, blurred consciousness.

What should you do?

1. IV vasodilator.
2. Diuretic.
3. Atropine.
4. Retain Foley’s.

Complication

Autonomic dysreflexia

Thoracolumbar injury