

Spinal Trauma

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INTRODUCTION

- Causes
 - traffic accidents
 - falls
 - violence related injuries
 - sports related injuries
 - Others
- Most frequent levels
 - C5-C7
 - T12
 - L1
- risk factors
 - age,
 - gender,
 - Alcohol
 - drug use

CLASSIFICATION OF SPINAL CORD INJURIES

- Primary injury
- Secondary injury

CLINICAL MANIFESTATIONS

- complete spinal cord lesion
 - paraplegia (in thoraco-lumbar)
 - Tetraplegia (in cervical)
- Respiratory dysfunction
- sensory and motor paralysis
- Incomplete spinal cord lesions
 - central,
 - lateral,
 - Anterior
 - peripheral.
- Loss of bladder and bowel control
- Loss of sweating and vasomotor tone

PATHOPHYSIOLOGY

- From transient concussion to
 - contusion
 - laceration
 - compression of the cord substance
 - to complete transection

ASSESSMENT AND DIAGNOSTIC FINDINGS

- Neurological examination.
- CT Scan and MRI.
- Myelogram
- Continuous ECG monitoring
 - Bradycardia
 - asystole

EFFECTS OF SPINAL CORD INJURY

- Central cord syndrome
- Anterior cord syndrome
- Brown-Sequard syndrome

MEDICAL MANAGEMENT

- ABC
- oxygenation and cardiovascular stability
- High doses of corticosteroids
 - NASCIS protocol
- Diaphragmatic pacing (electrical stimulation of the phrenic nerve)

SKELETAL FRACTION REDUCTION AND TRACTION

- immobilization and reduction of dislocations
- stabilization of the vertebral column

COMPLICATIONS

- spinal or neurogenic shock,
- Deep vein thrombosis,
- Respiratory complications (respiratory failure, pneumonia),
- Autonomic dysreflexia (characterized by headache,
- profuse sweating, nasal congestion, piloerection (goose bumps),
- bradycardia and hypertension.
- Infection (Urinary, respiratory, local).

SURGICAL MANAGEMENT

- Indications
 - compression to the spinal cord
 - unstable vertebral body
 - presence of progressive deficit
 - epidural hematoma
 - bony fragments or penetrating injury

EMERGENCY MANAGEMENT

- rapid assessment
- Immobilization
- control of life threatening injuries
- transportation to the nearest medical emergency
- neck should be immobilized
- not allowe to sit

ASSESSMENT

- breathing pattern
- motor and sensory function
- edema of the spinal cord