Cervical Spine Injuries and Neck Pain

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Cervical Spine Injuries and Neck Pain

- Common problem
- Potentially very serious
- Injuries may involve multiple structures:
  - Ligaments, disks, muscle, bone, facet joints, spinal cord, or nerve roots

Cervical Spine

Anatomy
Physical Exam

C5 Neurologic Level

Motor
- Deltoid
- Triceps

Reflex

Sensation
- C5
C6 Neurologic Level

Motor

Reflex

Sensation

Biceps Wrist Extensors

C7 Neurologic Level

Motor

Reflex

Sensation

Triceps Wrist Flexors Finger Extensors

C8 Neurologic Level

Motor

Reflex—None

Sensation

Interosseous Muscles Finger Flexors

T1 Neurologic Level

Motor

Reflex—None

Sensation

Interosseous Muscles

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Acute Injuries

Severe Injuries
Fractures and Dislocations

Cervical Spine Injuries
Unconscious Patient

- Very serious problem
- Always assume a cervical spine injury
- Follow spine injury protocol with head and neck support, log roll, and back board

Mechanism of Injury

- Axial loading
- National Football Head and Neck Injury Registry
  - Formed in 1975
  - Data led to rule changes:
    - Banning spearing
    - No head first contact

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Cervical Spine Injuries
Fractures and Dislocations

- Dislocations or subluxations:
  - Can be mild or severe, may be associated with fractures
  - Involve serious ligament and soft tissue injuries with potential instability
  - Facet dislocations or jumped facets are very serious
  - Neurological risk, careful neurological exam
  - Many will need surgical treatment

Cervical Spine Injuries
Fractures and Dislocations

- Fractures:
  - May involve vertebral body, lamina, facet joint, or spinous process
  - Can be mild or very severe
  - Fracture and dislocation combination usually is the worst case scenario
  - Neurological risk, careful neurological exam
  - Many may need surgical treatment
General Types of Injuries
Cervical Sprain

- Common injury
- Ligament, muscle, soft tissue injury
- Localized neck pain, stiffness
- No numbness or weakness
- Treatment: rehab.
- Return to play: normal ROM

General Types of Injuries
Cervical Disk Injuries

- May include tears or herniations
- Radicular pain and/or numbness, weakness
- Persistent symptoms
- Treatment varies, depends on severity: rehab, medications, injections, or surgery
Cervical HNP

General Types of Injuries
Nerve Root/Brachial Plexus Neuropraxia

- Burner or stinger
- Temporary weakness and numbness
- Cervical nerve root compression (C6)
- Stretch injury
- Return to play only when symptoms are COMPLETELY resolved
- Best prevention is in good shoulder pads

General Types of Injuries
Cervical Cord Neuropraxia

- Rare severe condition
- Symptoms usually bilateral or involving the lower extremities, transient quadriplegia
- On severe cases may last over one week
- Needs evaluation with MRI and frequent neurological examinations
- Treatment based on severity and MRI findings

Thank you!

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