Lesson 7: Head, Neck, Spinal Injuries

Emergency Reference Guide p. 51-58
Objectives

• Demonstrate field assessment for injuries to head
• List signs & symptoms for injuries to head
• Describe emergency treatment for head injury
• Describe how some head injuries can be prevented
• List common MOI for spinal trauma
• List signs & symptoms of spinal injury
• Demonstrate field assessment of injuries to spine
• Demonstrate how to properly restrict spinal motion
• Demonstrate, rescuer rolls (1 & 2 person)
• Demonstrate BEAM move of patient
• Know when to evacuate slow or fast
Key Points

• Head/neck/spinal injuries among most delicate
• Even injuries that don’t appear severe can progress, and become life threatening
• Brain is critical organ, and must have constant blood flow
• Blow to head can lead to swelling of brain/bleeding in the cranial space
• Brain injuries can quickly cause death
• Adequate care not possible in the Wilderness, so prevention is especially important
Checking and Caring for Head & Brain Injuries

• Superficial Scalp wounds:
  – May lead to heavy bleeding/lumps
  – Are rarely serious, if skull is intact & brain is undamaged

• Care for Scalp wounds
  – Apply light pressure from bulky dressing.
    • Do not apply direct pressure (may move bone fragments into the brain)
  – For bumps, apply cold pack to swelling
Mild Brain Injury

- **Signs & Symptoms:**
  - Short term nausea
  - Blurred vision (for brief period)
  - Headache
  - Dizziness
  - Lethargy

- **Care:**
  - Care for external wound (bleeding)
  - Monitor for 24 hours
  - Awaken patient every 2 hrs check for signs of serious brain injury
Serious Brain Injury

• May or may not involve skull fracture

• External Signs & Symptoms:
  – Depression in the skull (do not push on it)
  – Fracture that is visible where scalp is torn
  – Bruising around both eyes &/or behind ears
  – Clear cerebrospinal fluid &/or blood weeping from nose/ears

• If skull fractured, care for serious brain injury
Serious Brain Injury (cont’d.)

• Signs & Symptoms:
  – Long term loss of consciousness, patient does not respond to aggressive stimulation
    • The longer unconscious, the more serious
    • Unconsciousness is life threatening
  – Mental status deterioration
    • Disoriented to irritable to combative
  – Personality changes
  – Loss of coordination/balance/speech
  – Debilitating headache
Serious Brain Injury (cont’d.)

• Signs & Symptoms (Cont’d.)
  – Visual disturbances
  – Inability to move, or sense touch in extremity
  – Seizures
  – Persistent nausea & vomiting
  – Relapse into unconsciousness
  – Dilated eyes
    • Check pupil response with light
    • Both pupils should respond immediately & the same way
Serious Brain Injury (cont’d.)

• Later Stages signs & symptoms
  – Heart rate slows to 40 bpm then speeds up
  – Erratic respiratory rate
  – Unequal pupil size

• Skull fracture patients sometimes appear to recover then get worse
Serious Brain Injury Care

• If serious head injury, assume neck injury and immobilize head
• Keep patient calm
• GO FAST to evacuate/get help
Guidelines for Evacuation

• Evacuate any patient who does not respond to aggressive stimulation

• GO SLOW for responsive patient with no signs of serious brain injury
  – Test balance (i.e. stand and close eyes)
  – Make sure terrain is safe

• GO FAST, if signs of serious brain injury Especially, if decreased mental status/stroke/skull fracture
  – Always carry the patient (do not let him/her walk)
Guidelines for Evacuation (cont’d.)

- During evacuation maintain open airway:
  - H.A.I.N.E.S position (High Arm IN Endangered Spine)
  - If on rigid backboard, elevate head 6-8 inches
  - Transport with head up hill
Overview of Spinal Injuries

- Spinal Cord...bundle of nerves protect by spinal column from neck to bottom of back
- Damage to spinal cord may cause permanent paralysis/death
- Ideas for preventing spinal injuries?
Spinal Injuries Prevention

• Approach activities with safety in mind
• Climb only with appropriate climbing gear
• Enter water feet first for the first time.
• Water must be 7-9 feet deep and clear of obstructions
• Fasten seatbelts
• Ski bindings must be releasable
Highly Suspect Mechanisms of Injury (MOIs)

What kinds of accidents should spinal injuries should be suspected?
Highly Suspect MOIs

- Compression/axial loading (i.e. falling on head/spine)
- Falls on buttocks transmitting force to spine
- Falls from heights greater than person’s height
- Excessive flexion (i.e. chin forced to chest)
- Excessive extension or rotation
- Pulling/jerking head
- Penetration as from gunshot/arrow
- Diving mishap
- Car crash
Caring for Spinal Injuries
Caring for Spinal Injuries (cont’d.)

• If spinal injury suspected, immobilize until it is ruled out
• Help patient stay calm
• Keep patient still to prevent further injury
• Look for:
  – Spine pain/tenderness
  – Altered sensations in extremities
  – Respiratory difficulty
  – Loss of bowel control
  – Shock
In Line Stabilization
Caring for Spinal Injuries (cont’d.)

• Priority is management of ABCDEs:
  – Modified jaw thrust to open airway
  – Remove helmet only, if interferes with breathing
  – Immobilize head/neck/back
  – Repeat hands-on physical periodically
  – Observe patient & record for at least 24 hrs
  – Check Circulation/Sensation/Movement (CSM) beyond the injury site
Caring for Spinal Injuries (cont’d.)

• If patients neck is at an odd angle, straighten with slow, gentle movements
  – Improves airway, immobilization easier
  – Stop, if causes pain/meets resistance

• If patient is contorted, slowly, gently straighten one body part at a time

• Cervical collars don’t totally immobilize. Use manual immobilization as well
Immobilizing the Head/Neck
Immobilizing the Head/Neck
Full Body Immobilization
Activity
Caring for Spinal Injuries

• Break into groups of 3:
• Use material from your backpack to make an improvised cervical collar:
  – Extra/bulky clothing
  – Foam sleeping pad
  – SAM splints
  – Towels
  – Hip pads from Backpack
Care for Spinal Injuries

• If alone, place solid objects on either side of head to free you for other tasks
• Wait for a stretcher...do not attempt to transport patient
• When strapped to stretcher:
  – Eliminate any possible movement
  – Fill in open spaces with pads/blankets/etc.
  – Strap head down last
Techniques for Moving Spine Injured Patient

• Log Roll:
  – Break into groups of 3
  – practice rolling patient to the side, placing mat under him/her & roll back into position
  – The lead rescuer does an inline stabilization, other rescuers follow his/her command
  – Try with just one rescuer
Log Roll
B.E.A.M. Lift
B.E.A.M. Lift
B.E.A.M. Lift
Back Pack Carry
Short Distance Transfer Technique

• Move **ONLY**, if necessary to prevent further injury

• When moving:
  – Maintain ABCDE’s
  – Transfer only, if initial pain/fear subsided
  – Plan/prepare movement so done only once
  – Rehearse so all know what to do
  – Responder doing inline stabilization is in charge
  – Use BEAM technique for movement
Performing Focused Spine Assessment

• If spinal injury suspected because of MOI, perform focused assessment
  – Helps determine whether spinal injury occurred (together with other signs/symptoms)
  – To “pass” focused assessment patient must:
    • Be assessed at AVPU of A+Ox3, or higher
    • Appear sober without severe pain or psychological distress
    • Free from altered sensations
    • Has positive CSM in all extremities
Performing Focused Spine Assessment (cont’d.)

– Has grip strength & ability to lift both legs against resistance

– Is able to move head forward & side to side

• If all conditions met, discontinue inline stabilization
Spinal Injury Scenario

- Form groups of 4-5:
- Have first aid kits/report forms, pocket guides/gloves ready
- Scenario (1 victim):
  Early morning late August. No immediate danger from weather. Damaged branches falling, ground is wet. You are part of relief operation after tornado. Person is lying on ground in front of house. Woman is standing next to him, a ladder, shingles, and tools are near the injured person.
Guidelines for Spinal Injury Evacuation

- GO FAST, if any signs/symptoms of spinal injury
- Professional evacuation is REQUIRED for spinal injury
Questions???

What else could you add to your First Aid Kit?