Spinal Injury Assessment and Immobilization

The initial field assessment of potential spine injury begins with an assessment of the Mechanism of Injury. For the purpose of initial field management, a clearly negative mechanism is managed as a negative spine injury. Patients with a positive mechanism and those with an uncertain mechanism should have a SPINE INJURY CLINIC ASSESSMENT performed. Clinical criteria are used as the basis for assessment. If any of the clinical criteria present or if the assessment is not completed the patient is treated as a positive spine injury.

A negative mechanism means that given the impact and forces involved, there is no reasonable possibility that spine might be involved. Examples include: a rock dropped onto a foot, twisted ankle without a fall, a gunshot wound limited to an extremity.

A positive mechanism refers to violent impact forces that are clearly capable of damaging the bony spinal column. Examples include: a high velocity vehicle crash, fall from 20 feet, or a gunshot wound to the neck or torso.

An uncertain mechanism means that there is uncertainty regarding the impact and forces involved. Examples include: trip and falls, falls 2-3 feet in a child, a low-speed "fender bender" MVA, or a moderate speed MVA when the patient initially is ambulatory without obvious injury.

If a positive or uncertain mechanism exists, the following clinical criteria are assessed:

A) Altered Mental Status
B) Use of Intoxicants
C) Suspected Extremity Fracture
D) Motor and/or Sensory Deficit
E) Spine Pain and/or Tenderness

If any of the clinical criteria are present the patient is managed as a positive spine injury. If none of the clinical criteria are present the patient may be treated as a negative spine injury.

SPINE INJURY CLINICAL ASSESSMENT

Procedure:

A. Prevent spinal movement by in-line manual stabilization.

B. Assure adequate management of ABC's
   1. Any unstable patient or patient with inadequate ABC's should be treated as a positive spine injury

C. Assess for the presence of Clinical Criteria. Presence of any of the clinical criteria should be treated as a positive spine injury.
   1. Assess for Altered Mental Status
      a. Ask patient to identify name, place and date.
      b. Assess for any history of confusion
      c. Assess for memory deficits
   2. Assess for Evidence of Intoxication
      a. Ask if intoxicants have been used. Assume intoxication if yes in any amount.
      b. Assess for smell of intoxicants
      c. Behavior may indicate intoxication

2-09
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3. Assess for Extremity Fracture above the hand or foot
   a. Suspected extremity fracture, including those to the wrist or ankle, may make a clinical assessment for spine pain and/or tenderness unreliable.

4. Assess for Motor and/or Sensory Deficit
   a. Ask the patient to move all extremities (the lower extremities alone are not enough, some spinal cord injuries cause more upper extremity than lower extremity weakness).
   b. Ask for any history of numbness or shooting pains.
   c. Assess for loss of sensation in upper and lower extremities.

5. Assess for Spine Pain and/or Tenderness
   a. Ask the patient if there is any pain along the neck or back
   b. Feel the neck and ask if there is tenderness
   c. If there is no spine pain or neck tenderness the patient may be log rolled (if supine) to feel for thoracic and lumbar spine tenderness.

Procedure for management of a Positive Spine Injury patient:

Only approved immobilization devices will be used. Assess for motor and/or sensory deficit before and after spine immobilization

A. Prevent spinal movement by in line manual stabilization.
B. Apply rigid extrication collar.
C. Place patient onto and/or into the extrication device while maintaining C-spine stability.
D. Secure the patient's body to the extrication device while maintaining C-spine stability.
E. Secure patient's head with appropriate device to prevent anterior or lateral movement. Maintain patient's airway.

Approved Devices:
A. Standard long backboard (non-metallic).
B. Standard short backboard (non-metallic).
C. Commercially prepared extrication devices (Zee, KED, Disposable boards).
D. Head secured with: Rolled blankets and tape or commercial head immobilizer.
E. Rigid extrication collars.

Procedure for management of a Negative Spine Injury patient:

A. Treat injuries per appropriate protocol
B. Transport for emergency department evaluation.

Negative injury classification does not exclude the possibility of other nonspine or internal injuries. This policy should never be used to determine if patients can be released at the scene.