Spinal Injuries

Signs and Symptoms

- Pain, swelling, bleeding
- Altered mental status
- Unconscious
- Significant mechanism of injury

History

- Sports injury
- Time of injury
- Mechanism: blunt/penetrating
- Loss of consciousness
- Bleeding
- Evidence of multi-trauma
- Prior spinal problems
  - Ankylosing Spondylitis
  - Kyphosis

Differentials

- Other traumatic causes of back/neck pain
  - Soft-tissue injury (contusions, strain/whiplash)
  - Rib fractures
  - Intra-abdominal/intra-thoracic injuries
- Other non-traumatic causes of back/neck pain
  - Aggravations of chronic spine conditions/pain
  - Abdominal aortic aneurism
  - Aortic dissection
  - Cardiac pain
  - Pulmonary embolus
  - Kidney stones, infections

WARNINGS

! **Exercise extreme caution** when moving a patient with a suspected spinal injury.

Performance indicators

- Documentation of GCS.
- Documentation of sensory/motor exam before and after immobilization.
- Appropriate decision making for immobilization with documentation.

Care

B E I P

Follow General Directive #3, Orders for all Patients.

B E I P

The following patients should be suspected of having a spinal injury:

Any patient with a significant mechanism of blunt traumatic injury or with penetrating trauma to the head/neck/torso.

Any patient with minor trauma or potential trauma (such as unwitnessed syncope) who has any of the following:

- A complaint of neck or back pain.
- Tenderness upon palpation of spine.
- Altered sensorium (intoxicated patient, agitated/uncooperative patient, patient with altered mental status).
- Painful distracting injuries.
- Deficits in strength or sensation.

Does the patient have an isolated spinal injury?

No

Immobilize patient and refer to Trauma Protocol # 04 Major Trauma

Yes

B E I P

If not already done so, manually stabilize the patient's head and neck using manual stabilization.

Apply appropriately sized cervical collar or other cervical stabilization.

If the patient is suspected of having a head or spinal injury, found in a sitting position and is stable without any indicators for rapid extrication (respiratory/cardiac arrest, unconscious, profound shock, fire hazard, etc), a KED may be applied before carefully lowering and positioning patient onto a long spinal immobilization board.

If the patient is in a prone position, carefully log roll patient onto backboard for immobilization.

If the patient is in a supine position, carefully position the patient on to a backboard using a log roll or appropriate transfer device i.e.: scoop stretcher.

If patient is standing, carefully move patient to the backboard by using "standing take down" technique.

Patient should be secured to at least three anchor points (legs, pelvis, shoulders/chest).

Consider pain management. Refer to Non-cardiac Protocol #09 Pain Management, as necessary.

Pearls

- Manual stabilization should not be released until the patient is fully immobilized and secured to a backboard.
- If a patient with a possible spinal injury is wearing a helmet (i.e. motorcycle or bicycle) the helmet should be removed to maintain proper spinal alignment.
- If a patient with a spinal injury is wearing a football helmet and shoulder pads, they should be left in place and only the face piece (cage) removed to access the patient's airway.
- If patient cannot be immobilized in a neutral, flat supine position, use padding to immobilize in position of comfort.
- Pregnant patients over 20 weeks should be immobilized supine and tilted to the left 30 degrees to prevent supine hypotension syndrome.
- Maintain SpO_2 > 90%
- GCS recheck minimum every 10 min.