VENTURA COUNTY MEDICAL CENTER
CLINICAL PRACTICE GUIDELINE/PROTOCOL
THORAOLUMBAR SPINE TRAUMA

The contents of this clinical practice guideline are to be used as a guide. Healthcare professionals should use sound clinical judgment and individualize patient care. This CPG is not meant to be a replacement for training, experience, CME or studying the latest literature and drug information.

1. All blunt trauma patients & falls should be considered as having a spinal injury until proven otherwise.
2. If a fracture is noted in one area of the spine, complete spine radiographs (Cervical, Thoracic & Lumbar) should be obtained to assess for additional fractures.
3. Maintain Thoracolumbar (TL) Spine Precautions until cleared (see pages 2-3):
    a. Strict bed rest
    b. Elevate head of bed via reverse Trendelenburg only
    c. Logroll patient with 3 personnel (one at upper torso, one at lower torso/legs, and one at head who controls the roll verbally).
4. Maintain Cervical Spine Precautions until the cervical spine has been cleared (See Cervical Spine Trauma Guideline)
5. It is important to realize that the back board is not part of spinal precautions. This device is utilized only to facilitate transport of the patient and should be removed as soon as possible so not to cause skin break down.
6. Spine exam:
    a. Logroll patient with full C-spine & TL spine immobilization (requires 1 person at head, two on one side and another to examine – 4 total people) to determine areas of tenderness in the cervical, thoracic and lumbosacral spine. If tenderness is present, assume the spine to be unstable.
    b. Examine for areas of increased kyphosis or spinous process step-off.
    c. Perform neurologic exam to determine any deficits suggestive of neurologic injury.
    d. Examine rectal tone (involuntary and voluntary).
7. Begin steroid protocol if complete or incomplete neuro deficit is found within 8 hours of injury (see Traumatic Spine Injury Chapter).
    a. Notify the neurosurgeon and trauma surgeon prior to implementation.
    b. Must also have patient on GI prophylaxis when on high dose steroids.

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TL-Spine Clearance in the Evaluable Patient

- All blunt trauma patients should be considered as having a spine injury until proven otherwise.
  - Maintain Spine precautions (strict bed rest, log roll via 3 personnel, elevating HOB via reverse Trendelenburg only)
- Patients considered to have high energy mechanism of injury (MOI) include:
  - Fall from >10 feet
  - Motor Vehicle Collision (MVC) or All Terrain Vehicle (ATV) collision
  - Auto vs. Pedestrian (AVP)
  - Crush injury
  - Concomitant cervical, thoracic or lumbar spine fracture
- Definition of evaluable patient (must fulfill all criteria):
  - Glasgow Coma Scale (GCS) of 15
  - Not intoxicated
  - No injury that would prevent the patient's full concentration on the exam (distracting injury)
  - Reliable clinical exam
- **Be sure to clear the Cervical Spine utilizing C-Spine Clearance Guidelines**

FIRST STEPS - Determine if patient has neurological deficits, if they have a high energy mechanism of injury (MOI) and if they have Spine bone tenderness

1. **Evaluable patient without spine tenderness/pain, no neurologic deficits and do not have high energy MOI.**
   a) No spinal radiographs are required
   b) The spine may be cleared clinically by the attending physician with subsequent documentation of the patient's TL-Spine "clinical clearance" in the medical record with removal of TL-Spine precautions.
2. **Evaluable patient with significant cervical spine (bone) tenderness/pain or have High energy MOI, but no neurological deficit.**
   a) If patient having a CT scan for other reasons, obtain a 16 channel CT with reformatted axial collimation of TL-Spine (can be extracted from data of CT abdomen/pelvis, but order needs to be written for CT Thoracic and/or Lumbosacral Spine.) (If a patient does not receive a 16 channel or higher scan, they will require a separate dedicate 16 channel scan of the spine for proper evaluation.)
      - Urgent neurosurgical consult if CT demonstrates abnormality (also be sure to CT C-spine)
      - If CT is negative and the patient's pain resolves, one may clinically clear the spine as described above in 1b.

   b) If CT is not required for other reason, then obtain Thoracic and/or Lumbosacral Spine series.
      - If spine series demonstrates abnormality: order CT of Cervical & TL-Spine & obtain urgent neurosurgical consult.
      - If Spine series is negative and the patient's pain resolves, one may clinically clear the spine as described above in 1b.
      - If Spine series is negative and significant pain continues, continue Spine precautions and order a non-emergent CT of Thoracic and/or Lumbosacral Spine and proceed as described in 2a.

3. **Evaluable patient with neurological deficit referable to spine injury**
   a) Emergent 16 channel CT with reformatted axial collimation of Cervical and TL-Spine
   b) Emergent MRI
   c) Emergent Neurosurgical consult

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TL-Spine Clearance in the Non-Evaluable Patient

- All blunt trauma patients should be considered as having a spine injury until proven otherwise.
  - Maintain Spine precautions (strict bed rest, log roll via 3 personnel, elevating HOB via reverse Trendelenburg only)
- Definition of Evaluable patient (must fulfill all criteria):
  - Glasgow Coma Scale (GCS) of 15
  - Intoxicated
  - Injury that would prevent the patient's full concentration on the exam (distracting injury)
  - Reliable clinical exam

- Be sure to clear the Cervical Spine utilizing C-Spine Clearance Guidelines

The following Spine radiographic films are ordered on ALL non-evaluable patients

- Plain film: Lateral C-Spine demonstrating C1 & 2
- Axial Lateral C-spine visualizing base of skull to T1
- Either: Thoracolumbar 16 channel (reformatted axial collimation) or Plain films (AP & Lateral)

Any abnormality should result in an Urgent neurosurgical consult

1. Patients with abnormal radiographic studies and focal neurological deficits:
   a. Emergent MRI
   b. Emergent Neurosurgical Consult

2. Patients with normal radiographic studies but focal neurological deficits referable to spine injury:
   a. Emergent MRI
   b. Emergent Neurosurgical Consult

3. Patients with abnormal radiographic studies and no focal neurological deficits:
   a. Urgent Neurosurgical consult

4. Patients with normal radiographic studies and no focal neurological deficits:
   a. If the patient is likely to become evaluable within 24 hours (i.e. intoxicated without neurological injury), continue spine precautions and re-evaluate once intoxication resolved based on either the Evaluable or Non-Evaluable guidelines.
   b. If the patient is unlikely to become evaluable within 24 hours:
      - The physician may remove the patient's "TL-Spine Precautions" and documents "radiographic clearance of the TL-Spine" in the medical record.

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