

## **TRAUMA GUIDELINE:**

### **Cervical Spine Clearance Guideline**

Page 1 of 2 pages / last revised: March 2015



## **BACKGROUND**

Injury to the cervical spine is a common occurrence in the polytrauma patient. It is imperative that the diagnosis be made as early as possible after arrival to the hospital. Several factors must be considered during the evaluation of these patients such as mechanism of injury, appropriate physical exam, and imaging. Guidelines have been developed by the Eastern Association for the Surgery of Trauma (EAST). Our guideline for managing cervical spine injury is based on the EAST guidelines and consensus from the trauma service and neurosurgery service at Navicent Health.

## **MEDICAL GUIDELINES FOR CLEARING SURGICAL SPINE**

### **A. Patients at Risk for Cervical Injury that Require Evaluation**

- Any patient with a mechanism of injury that may result in a c-spine injury and has one or more of the following risk factors:
  - Neck pain, tenderness, muscle spasm
  - Altered mental status, GCS <14
  - Clinical evaluation complicated by drugs, alcohol
  - Head injury or craniofacial trauma
  - Distracting pain
  - A penetrating injury potentially involving the spine
  - High energy trauma mechanism

### **B. Physical Exam**

- If patient is alert, ask if they have pain in the posterior midline of their neck.
- If no pain, remove the collar while maintaining the neck in a neutral position.
- Palpate the posterior midline of the neck.
- If no tenderness, ask the patient to flex their neck and palpate the posterior midline.
- If no tenderness, ask the patient to extend their neck and palpate the posterior midline.
- If no tenderness, ask the patient to turn their head to the right and palpate the posterior midline.
- If no tenderness, ask the patient to turn their neck to the left and palpate the posterior midline.
- If no tenderness is observed during the above physical exam in an awake, alert, non-intoxicated and neurologically normal patient, the c-spine may be cleared by physical exam alone and the collar may be removed.
- If pain is noted at any stage of the above exam, the collar should be replaced and the patient should undergo a high resolution CT scan of the cervical spine.

### **C. Initial Imaging**

A high resolution axial CT scan with sagittal and coronal reconstructions of the cervical spine is the best imaging modality for the initial evaluation for the patient with suspected cervical spine injury. The CT scan should contain images from the occiput to T1. Plain radiographs contribute no additional information and should not be obtained as initial screening.

### **D. Awake, alert, non-intoxicated, neurologically normal patients with no distracting injuries:**

## TRAUMA GUIDELINE:

### Cervical Spine Clearance Guideline

Page 2 of 2 pages / last revised: March 2015



These patients may be cleared by physical exam alone.

#### **E. Patients with neck pain:**

Patients that complain of neck pain before or during the physical examination of the neck, require a high resolution CT scan of the neck. The patient should remain in the collar during this evaluation. If CT is negative and pain persists, a neurosurgery consult should be obtained. Further evaluation of the spine may require flexion and extension films and/or MRI. Flexion and extension films should NEVER be performed on a mentally altered patient who cannot participate in the exam.

#### **F. The obtunded patient:**

Evaluation of this patient type is one of the most challenging. Controversy remains whether or not to remove the collar after a negative high resolution CT scan of the neck. Options include removal of the collar after a negative CT scan or obtaining an MRI to rule out ligamentous injury. If the patient is critical, the risk of moving the patient to the MRI scanner should be considered as this transport might have deleterious effects. A neurosurgical consultation may be considered.

#### **G. Patient with penetrating trauma to the brain:**

Immobilization in a cervical collar is not necessary unless the trajectory suggest direct injury to the cervical spine.

#### **H. Patients with obvious neurological deficit due to cervical spine injury:**

These patients are excluded from this guideline and should receive immediate neurosurgical consultation.

#### **I. Documentation**

The surgery resident, trauma attending, ortho attending, neurosurgery attending and nurse practitioner/physician assistant on the trauma/ortho/neurosurgery service or their designee may clear the cervical spine using the above noted guideline. This should be noted in the medical record and an order should be written to d/c the collar when appropriate.

#### **REFERENCES**

1. Como JJ, Diaz JJ, Dunham CM, et al. **Practice Management Guidelines for Identification of Cervical Spine Injuries Following Trauma: Update from the Eastern Association for the Surgery of Trauma Practice Management Guidelines Committee.** *JJ Trauma.* 2009;67(3):651-659.
2. Griffen MM, Frykbery ER, Dewin AJ, et al. **Radiographic Clearance of Blunt Cervical Spine Injury: Plain Radiograph or Computed Tomography Scan?** *JJ Trauma.* 2003;55:222-227.
3. Patel MB, Humble SS, Cullinane DC, et al. **Cervical Spine Collar Clearance in the Obtunded Adult Blunt Trauma Patient: A systemic Review and Practice Management Guideline from the Eastern Association for the Surgery of Trauma.** *JJ Trauma.* 2014;78(2):430-441.

[Click here to confirm that you have read the article and receive  
Trauma Education Credit](#)