## Cervical Collar Clearance Protocol

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**Oversight:**
- Spine Center Physicians (Orthopedic/Neurosurgery Spine)
- Trauma Program Operational Process Performance (03/29/2017)
- Multidisciplinary Trauma Conference (03/29/2017)

**Vanderbilt University Medical Center**
**Division of Trauma, Emergency Surgery, and Surgical Critical Care**

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Definitions

Hyperreflexia, defined by any of the following:
1. Positive Babinski sign
2. > 2 beats of clonus
3. Positive Hoffman’s reflex
   • Upper motor neuron lesion from cord compression
   • Is elicited by flipping either the volar or dorsal surfaces of the middle finger & observing the reflex contraction of the thumb and index finger

NEXUS (National Emergency X-Radiography Utilization Study) Criteria, defined by any of the following:
1. Midline C-spine tenderness to palpation
2. Altered mental status
3. Intoxicated
4. Abnormal neurologic exam
5. Distracting injury

Abbreviations

AS, Ankylosing Spondylitis
C-collar, Cervical Collar
C-spine, Cervical Spine
DISH, Diffuse idiopathic skeletal hyperostosis
ED, Emergency Department
NP, Nurse Practitioner
VUMC C-Collar Clearance: ED patients and Inpatients

**Neurologically Normal Patient**

- **WITHOUT HYPERREFLEXIA**
  - Does patient have Any of the following:
    - Unable to flex/extend?
    - Unable to rotate?
    - ≥1 NEXUS criteria?

  - **NO** → Remove C-collar
    - No acute abnormality
    - Normal alignment, No fracture
    - No evidence of AS or DISH
      - **Remain in C-collar**
      - **Repeat Uprights (2 weeks)**
      - **NP Spine Clinic (2 weeks)**

  - **YES** → Obtain CT C-spine without contrast
    - No acute abnormality
    - Normal alignment, No fracture
    - Evidence of AS or DISH
      - **Obtain & Label Upright AP/Lateral X-rays of the C-spine (including T1) while in C-collar**

- **WITH HYPERREFLEXIA**
  - **Consult Spine**
    - Acute abnormality (Positive fracture and/or abnormal alignment)
    - Unclear findings
      - **Remove C-collar**
Intubated patient without planned extubation in 48 hours

**Obtain CT C-spine without contrast**

- No acute abnormality
  - Normal alignment, No fracture
  - No evidence of AS or DISH
  
  - Does patient have Any of the following:
    - Cannot move all extremities antigravity?
    - Asymmetrical extremity strength?
    - Hyperreflexia?
    - No rectal tone?
    
  - **NO**
    
    - **Remove C-collar**
  
  - **YES**
    
    - **Obtain MRI C-spine without contrast**
      
      - No MRI acute abnormality
        - Normal MRI alignment
        - No fracture on MRI

**Consult Spine**

- Acute abnormality (Positive fracture and/or abnormal alignment)
  
  - Unclear findings
Placing NP Spine Clinic Appointments in WizOrder:

- Type in “Central appointment”
- Click “1. f/u appointment, post dc (using central appointment scheduling)
- Fill out the form with the following:
  - Clinic name: Neurosurgery
  - Provider name: NP spine clinic
  - Timeframe: 2 weeks
  - Diagnosis: C-collar clearance, hospital follow-up
  - Comments: Prior to appointment, Patient needs AP/lateral X-Rays of the cervical spine in collar
  - CAS can reach team with questions at: 615-875-5100

**Note:** For outpatient NP Spine Clinic appointments, all Trauma Patients will be seen with *or without* prior inpatient Spine consultation (i.e., cervical collar patients cannot be refused outpatient spine appointments)

**Note:** For Emergency Department patients, the Emergency Department Case Manager can assist with this scheduling
Key References: