Blunt trauma mechanism consistent with potential axial spine injury.

↓

Prioritized management of airway, breathing, & circulation/hemorrhage. Axial spine immobilization maintained at all times.

↓

Is patient a candidate for clinical clearance of the cervical spine?

YES →→

Patients who meet **ALL** criteria may be cleared by clinical exam if **ALL** of the following conditions are met:
- absence of subjective neck pain
- absence of palpable tenderness
- absence of pain on full (volitional) lateral rotation
- absence of pain on full (volitional) neck flexion
- absence of pain on (volitional) neck extension

↓ NO

Obtain cervical spine series. Criteria for adequate study:
- visualization to top of T1
- Good quality AP, lateral & odointoid
- reviewed by experienced MD
- attending MD (NS, ortho) to eval high risk or indeterminate cases

Criteria not met →→

- repeat if NOT technically adequate
- consider Swimmer's / oblique views
- CT/MRI scan of neck for difficult patients.
- consider leaving in c-collar if exam is expected to become reliable (eg ETOH)

↓ Criteria met

skeletal or ligamentous injury identified?

YES →→

maintain is strict axial spine precautions until a determination RE stability is made AND thoracic and lumbo-sacral films are cleared.

↓ NO

Ligamentous or occult bony injury suspected?

NO →→

Patient may be cleared of significant c-spine injury given:
- good quality 3 view films
- experienced reviewer
- No significant related acute abnormalities ("stone cold normal")
- absence of any clinically related findings

↓ YES

Volitional flexion/extension films
or
MRI / CT
Maintain c-spine precautions (rigid collar)

POS. →→

maintain is strict axial spine precautions until a determination of stability is made AND thoracic and lumbo-sacral films are cleared.

↓ NEG.

Patient may be cleared of significant c-spine injury

COMMENTS

C-spine radiographs are NOT necessary prior to emergent endotracheal intubation.
patients in extremis may forgo axial spine radiographs pending initial treatment of injuries

Patients who meet the **ALL** of the following criteria may be canditates for clinical exam clearance of the cervical spine:
- GCS=14/15, cooperative & communicative (no significant language barrier)
- not significantly influenced by intoxicants or drugs
- No clinical evidence of CNS or focal neurological injury
- No subjective complaints of shoulder, neck, or interscapular pain
- Normal, unblunted response to pain
- No other significant very painful, distracting injuries.

CT / MRI may be indicated for the following:
- extensive degenerative spine disease
- Cervical spondlytic myleopathy history
- anatomically difficult patients

All patients with unstable or potentially unstable axial spine injuries should be admitted to the 4E ICU or 4B unit
C-spine precautions include the following:
- Philadelphia (rigid) collar
- Log roll only
- Supine position unless otherwise specified

Ligamentous or occult bony injury may be suspected on the basis any of:
- peripheral neurologic sx.: deficits/paraesthesias etc.
- complaints of significant, persistent neck pain
- any soft tissue abnormality on spine radiographs
- external evidence of direct trauma to cervical spine
- other associated axial spine injuries
- mechanism and advanted age or degenerative changes

If patient unable to cooperate with F/E films for > 48 hours, then proceed with CS radiographic clearance by CT or MRI.

Clearance of the cervical spine should be clearly documented in the chart. ALL patients who have NOT received clearance must be maintained in C-spine precautions.

INITIAL DIAGNOSIS OF POTENTIAL CERVICAL SPINE INJURIES

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