Acute Cervical Spine Injury Management

Unstable patient?

Yes
Stabilize and prepare for EMS transport to ED

No
Either significant trauma requiring CT imaging beyond C-spine, or acute traumatic posterior midline cervical tenderness?

Yes
Stabilize spine, hard collar placement and prepare for EMS transport to ED *(see below if patient refuses)*

No
Concern for C-spine injury?

Yes
Minimize Movement, Apply NEXUS or Canadian C-Spine Rules in conjunction with clinical evaluation

Canadian C-Spine Rules:

1. Perform imaging in patients with any of the following
- Age 65 years or older
- Dangerous mechanism of injury*
- Paresthesias in the extremities

2. In patients with none of the criteria above, assess for any low-risk factor that allows for safe assessment of neck motion:
- Simple rear-end motor vehicle accident
- Sitting position in emergency department
- Ambulatory at any time
- Delayed onset of neck pain
- Absence of midline cervical spine tenderness

If none of the low-risk conditions are met, the patient must be imaged.
If any low-risk condition is met, perform range-of-motion testing as described in condition three

3. Test active range of motion
Perform imaging in patients who are not able to rotate their neck actively 45 degrees both left and right. Patients able to rotate their neck, regardless of pain, do not require imaging. Passive (examiner facilitated) range of motion testing should not be done.

NEXUS low-risk criteria:
Imaging is NOT necessary in a patient younger than 65 years who satisfies all 5 of the following low-risk criteria:

- Absence of posterior midline cervical tenderness
- Normal level of alertness
- No evidence of intoxication
- No abnormal neurologic findings
- No painful distracting injuries

Positive Findings
- Apply Hard Collar
- Transport by EMS to ED

If Patient Refuses:
- Complete AMA form
- Consider outpatient STAT CT (*will need to call imaging office and confirm patient will be accepted for CT*)
- If patient elects for self-transport to ED, consider placement of collar for transport, but patient should not be driving

No/Negative Findings
Treat outpatient as indicated

***Dangerous mechanism of injury**
- Fall from 3' or five stairs
- Axial load to the head
- MVA at high speed >62 mph
- Motorized recreational vehicle accident
- Ejection from a vehicle
- Bicycle collision with an immovable object

Scan QR code for reference

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