APPENDIX 17

Appendix: 17

TITLE: Selective Spinal Motion Restriction Protocol

REVISED: November 1, 2017

Selective Spinal Motion Restriction

1. BACKGROUND:

This protocol is intended to allow selective exclusion of spinal motion restriction in patients with a low index of suspicion for spinal injury and to use the long spine board and/or scoop stretchers for extrication purposes only.

2. INDICATIONS:

Mechanism of Injury

There is insufficient evidence to support absolute criteria for mechanism of injury (MOI) either as an inclusion or exclusion criteria for any spinal motion restriction consideration. That said, a prudent prehospital provider should carefully evaluate the role of mechanism of injury in the total clinical presentation **with a tendency to err on the side of spinal motion restriction**, particularly with the **frail, chronically bedridden, or extremes of age (< 12 or >65 years of age)**.

Other MOI of concern would include *are not limited to*:

1. Falls greater than 3 feet or 5 stairs
   a. *Any* fall for the frail, chronically bedridden, or elderly (>65 years of age) may be concerning
2. Motorsports and extreme-sports injuries
3. High impact MVC
   a. defined as > 60 mph (100 km/hr)
   b. or with intrusion > 6 inches
   c. Rollover or Ejection
   d. Vehicle vs. Pedestrian
4. Bicycle and motorcycle accidents.
5. Football and high impact athletic activities
6. Suspected Axial Loading injuries.
   a. *Note: Diagnostic axial loading of cervical spine is not recommended.*

Cervical Spine:
In order for providers to defer cervical spinal motion restriction in patients with mechanical potential for injury, **ALL** of the following criteria must be evaluated and individually documented.

1. No posterior neck pain or tenderness.
2. No intoxication.
3. No altered level of alertness.
4. No focal neurologic deficit.

5. No painful distracting injuries.

Thoracic and Lumbar Spine:
In order for providers to defer thoracic and lumbar spinal motion restriction in patients with mechanical potential for injury, ALL of the following criteria must be evaluated and individually documented.

For any patient with:

1. No tenderness of midline upper, mid or lower back.
2. No intoxication.
3. No altered level of alertness.
4. No neurologic deficit or incontinence.
5. No painful distracting injuries.

3. PROCEDURE

Cervical Spine:

If the above exclusion criteria are met, then extricate/assist the patient to the stretcher with the least manipulation of the spine as possible.

If the patient does not meet the exclusion criteria, apply a c-collar. Then utilize the appropriate transfer/extrication device (long spine board, KED, slider board or scoop stretcher, *etc.*) to move the patient to the stretcher with the least manipulation of the spine as possible.

Thoracic and Lumbar Spine:

If the above exclusion criteria are met, then extricate/assist the patient to the stretcher with the least manipulation of the spine as possible.

If the patient does not meet the exclusion criteria, utilize the appropriate transfer/extrication device (long spine board, KED, slider board or scoop stretcher, *etc.*) to move the patient to the stretcher with the least manipulation of the spine as possible.

Once the patient with suspected/known cervical, thoracic or lumbar spine injury is placed on the stretcher, remove the extrication device *as soon as safely possible* (provider discretion). **Keep the patient in the supine position** for transport/transfer to the appropriate destination. Any further transfers of the patient with a known or suspected spinal injury should be done with a slider board observing precautions not to manipulate the spine.

4. DEFINTIONS:

"Posterior neck pain or tenderness" is present if the patient reports pain on palpation of the midline neck from the nuchal ridge to the prominence of the first thoracic vertebra or any cervical spinous process. Absence of posterior neck pain or tenderness alone may not preclude the presence of an injury, particularly in the elderly.

Patients should be considered intoxicated if they have either of the following:

1. A history provided by the patient or an observer of intoxication or recent ingestion of alcohol or other mind altering substances such as benzodiazepines, narcotics or recreational drugs.
2. Evidence of intoxication on physical examination such as an odor of alcohol, slurred speech, ataxia, dysmetria, or other cerebellar findings or behavior consistent with intoxication.

An altered level of alertness can include any of the following:

- A Glasgow Coma Scale score of 14 or less.
- Disorientation to person, place, time, or events, including chronic disorientation (i.e. Dementia)
- A delayed or inappropriate response to external stimuli, or other findings.

When presented with an altered level of alertness in a traumatic patient, providers should err on the side of cervical spinal motion restriction (i.e. a cervical collar).

A focal neurologic deficit is any neurologic finding on motor or sensory examination that is abnormal. This includes sensory or motor abnormalities or autonomic dysfunction.

No precise definition of a painful distracting injury is possible. This category includes any condition thought by the provider to be producing pain or anxiety sufficient to distract the patient from a second (neck) injury. Such injuries may include, but are not limited to: any long-bone fracture, a significant abdominal injury, a large open wound or crush injury, large burns, or any other injury causing acute functional impairment.

While **any** injury may be considered distracting in the right context, specific injuries of concern would be:

1. Any moderate injury to the proximal upper extremity, shoulder, clavicle, or lateral neck
2. Facial injuries suspicious for fracture or significant discomfort.
3. Any injury requiring analgesia

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Selective Spinal Motion Restriction

Physician PEARLS:

NOTE WELL: Absence of posterior midline neck pain alone does not exclude the possibility of injury.

Providers should have a low threshold for placing the cervical collar, even in the absence of posterior neck pain.

In patients at extremes of age (< 12 or > 65), or patients with any underlying baseline mental dysfunction such as: dementia, other chronic neurologic conditions, rheumatoid arthritis, chronic steroid therapy, severe osteoporosis, those who are chronically bedridden require a higher level of concern. For possible cervical spine injuries in these patients a lower threshold for using a c-collar should be instituted.

Padding (inflatable mattress, towel rolls, blankets, *etc.*) is recommended when Appropriate for patient comfort.

Patients with penetrating trauma below the clavicle and no evidence of spinal injury do not require immobilization.

Unstable trauma patients (with the exception of certain penetrating trauma patients described above)should be strongly considered for immobilization. This definition includes:

- SBP of 90 or less, respiratory rate < 10 or >30 •
- Tachycardia > 130
- Age specific hypotension in children
    - <70 mmHg + 2 x age
    - *Or*
    - HR: > 200 or < 60

References

Stiell, I., Clement, C., McKnight, R., Brison, R., Schull, M., & Rowe, B. et al. (2003). The Canadian C-Spine Rule versus the NEXUS Low-Risk Criteria in Patients with Trauma. *New England Journal Of Medicine*, *349*(26), 2510-2518. http://dx.doi.org/10.1056/nejmoa031375

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