Pediatric long backboards: time for a change?

Julie C. Leonard, MD MPH

I have no disclosures.

POSITION STATEMENT

EMS Spinal Precautions and the Use of the Long Backboard
National Association of EMS Physicians and American College of Surgeons Committee on Trauma

PREHOSPITAL EMERGENCY CARE 2013;17:392-393
Implementation in the pediatric population

Position statement mute regarding age:

- Purposeful or an oversight?
- Discretion granted to local stakeholders
- Meant to address long backboard use, but also mentions cervical collar use

Variability of Prehospital Spinal Immobilization in Children at Risk for Cervical Spine Injury


Potential Adverse Effects of Spinal Immobilization in Children

Leonard JC, Mao J, Jaffe D. Prehospital Emergency Care, 2012
How does the position statement stack up to the current literature?

Appropriate patients to be immobilized with a backboard may include those with:
- Blunt trauma and altered level of consciousness
- Spinal pain or tenderness
- Neurologic complaint (e.g., numbness or motor weakness)
- Anatomic deformity of the spine
- High-energy mechanism of injury and any of the following:
  - Drug or alcohol intoxication
  - Inability to communicate
  - Distracting injury

Factors Associated With Cervical Spine Injury in Children After Blunt Trauma


Objective

To identify risk factors associated with CSI in children after blunt trauma
Study Methods

- Retrospective case-control study
- Five years: 2000-2004
- 17 medical centers in the Pediatric Emergency Care Applied Research Network
- 540 children with cervical spine injury compared to multiple control groups (random and matched) of children without cervical spine injury

Results

<table>
<thead>
<tr>
<th>CSI Risk Factor</th>
<th>Adjusted Odds-Ratio (95% CI)</th>
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<tbody>
<tr>
<td>Altered Mental Status</td>
<td>3.0 (2.1, 4.3)</td>
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<tr>
<td>Focal Neurological Findings</td>
<td>8.3 (5.6, 12.2)</td>
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<tr>
<td>Complaint of Neck Pain</td>
<td>3.2 (2.3, 4.4)</td>
</tr>
<tr>
<td>Torticollis</td>
<td>1.8 (1.1, 2.9)</td>
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<tr>
<td>Substantial Co-morbid Injury: Torso</td>
<td>1.9 (1.1, 3.4)</td>
</tr>
<tr>
<td>Predisposing Condition</td>
<td>15.0 (2.9, 78.0)</td>
</tr>
<tr>
<td>High Risk Mechanism: MVC</td>
<td>2.5 (1.8, 3.6)</td>
</tr>
<tr>
<td>High Risk Mechanism: Diving</td>
<td>73.0 (9.6, 555.6)</td>
</tr>
</tbody>
</table>

How does the position statement stack up to the current literature?

Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher, and may be most appropriate for:
- Patients who are found to be ambulatory at the scene
- Patients who must be transported for a protracted time, particularly prior to interfacility transfer
- Patients for whom a backboard is not otherwise indicated
Physiologic positioning?

Among Healthy Subjects: Non-physiologic positioning


Pediatric Patient Safety in Emergency Medical Services

Garth Moller, MD, MSHS*
Julie Lawrence, MD, MPH#
John Hoyle Jr., MD#

Clinical Pediatric Emergency Medicine, March 2014
Future Directions

Cascade of events...

Pilot study to develop a Pediatric Cervical Spine Injury Risk Assessment Tool

Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health
R21HD076108
Thank you!