

Paramedic Cat

Title: Scoop stretcher vs. Long backboard in patients with suspected spinal injury

Report By: Stephanie Camp

2nd Party Appraiser:

Clinical Scenario:

Paramedics respond to a 30yr old female with suspected back injury. Patient is on the floor. Paramedics are unable to rule out c-spine injury.

PICO (Population – Intervention-Comparison- Outcome) Question:

Pre-hospital adult patients with suspected spinal injury, does the scoop stretcher decrease patient movement and increase patient comfort compared to long backboard.

Search Strategy:

(((((((((Adult) or Prehospital) or Patient) or EMS) or Paramedic) or EMT) or ALS) or BLS)) And (((spinal immobilization) or splinting) or immobilization) or axial immobilization)) AND ((scoop stretcher) or combi-carrier) or scoop)) And (((decrease injury) or less movement) or decrease movement)

Search outcomes:

2 results, one was found through related citation

Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/ WEALNESSES
Julie M. Krell, MD 2003	Adult participants from pre-hospital and residency training programs. 31 participants (7 female) Sober and no prior spine disorders or arthritis	Prospective study LOE 3	The Ferno scoop stretcher was found to be as effective, if not	6-8 degrees less movement in the sagittal, lateral, and axial planes during the application of the FSS vs. LBB (both p<0.001)	+Used newer model FSS +Used rigid cervical collar +Used electromagnetic sensors

				<p>There was greater movement in both planes (sagittal and lateral) during the application of the LBB compared with application of the FSS</p> <p>FSS demonstrated superior comfort and perceived security</p>	<p>+ Used goniometer</p> <p>-Participants did not have any back injuries</p> <p>-Only able to evaluate healthy non-injured patients</p> <p>-Did not test comfort with LBB and FSS placed on a stretcher.</p>
Gianluca Del Rossi PhD 2009	5 lightly embalmed cadavers with no previous history of cervical spine pathology. First carried out on cadavers with intact spines and then repeated after the creation of a complete segmental lesion	Prospective study Level 3	<p>Decrease in patient movement with use of scoop</p> <p>The execution of the log roll maneuver created more motion in all direction</p>	<p>Log roll maneuver not only tends to create more motion than various lifting techniques but also creates more segmental displacement than the scoop stretcher, particularly in the medial-lateral and anterior-posterior directions</p>	<p>+ First measured with intact spines, then with complete segmental lesion</p> <p>+ Tested log-roll, lift-and-slide technique</p> <p>- Only tested instability at C5-C6 spinal level</p> <p>-Only tested 5 Cadavers</p>

Comments:

- Only one of the studies was able to evaluate each device for comfort and sense of security
- No testing was done on real patients with diagnosed spinal injuries

Consider: Why would you NOT change practice, based on this article?

I would consider holding off changing practice due to not being able to access randomized studies, and studies based on outcomes of patients with trauma injuries.

Due to lack of studies, and these two studies focusing on live healthy humans with no injuries and another with cadavers, which was unable to document comfort levels and pain scale. Also this study did note that there was an increase in 'bow' in the middle of the FSS. It is still unknown what weight range/limit would be acceptable for the FSS, and at what weight would cause 'too much bow'.

If more research comes forward about the detrimental effects of log roll than maybe the FSS may be the way to go.

Clinical bottom Line:

With the high volume of trauma calls that paramedics attend, and many patients being removed from spinal boards as soon as they reach the hospital it may be the very reason why there are not a lot of studies done with real live injured patients. As well very few immobilized patients actually sustain severe injuries, as the ones that do, may move less if they were more comfortable.

Many provinces' are now doing their own pilot projects to determine which device would provide patients with better outcomes and more comfort. If a service was to change protocol, a pilot program may be an option.

References:

Julie M. Krell, MD, Matthew S. McCoy, MD, Patrick J. Sparto, PhD, PT, Gretchen L. Fisher, NEMT-P, Walt A. Stoy, PhD, David P. Hostler, PhD, (2003) Comparison of the Ferno Scoop Stretcher with the Long Backboard for Spinal Immobilization

Gianluca Del Rossi PhD, Glenn R. Rehtine MD, Bryan P. Conrad ME, MaryBeth Horodyski EdD (2009) Are scoop stretchers suitable for use on spine-injured patients? American Journal of Emergency Medicine (2010) 28, 751-756