University of Pittsburgh • School of Health and Rehab. Sciences
Emergency Medicine

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Comparison of the Ferno Scoop™ Stretcher to the Long Backboard for Spinal Immobilization (abstract)

STUDY OBJECTIVES: Spinal immobilization is essential in reducing risk of further spinal injuries in trauma patients. The traditional long backboard is compared with The Ferno Scoop™ stretcher (Model 65-EXL), which has a more rigid design than the original model. We hypothesize that there is no difference in the amount of movement during immobilization between the new Ferno Scoop Stretcher (FSS) and the long backboard (LBB).

METHODS: Thirty-one volunteer subjects had electromagnetic angular position sensors secured over the forehead, C3 and T12. Subjects were placed in a rigid cervical collar and tested on both the FSS and the LBB (test order randomly assigned). For each device, there were 4 measurement phases: 1) baseline, 2) application (logroll onto LBB or placement of FSS around patient), 3) logroll and 4) lifting. During each phase, the amount of sagittal flexion, lateral flexion, and axial rotation were computed. Comfort and perceived security were also assessed on a visual analog scale. Repeated measures ANOVA was used to test the hypothesis for each phase.

RESULTS: Degrees of lateral and sagittal movement during the application of the LBB were significantly more than the FSS. (10.6°±0.7 vs. 2.9°±0.2 $p<0.001$). No difference was found during a secured logroll maneuver. The FSS resulted in more sagittal flexion during the lift than the LBB (4.8°±0.3 vs.3.2°±0.2). The FSS demonstrated superior comfort and perceived security.

CONCLUSION: The Ferno Scoop™ stretcher (Model 65-EXL) had less movement on application and increased comfort levels. Decreased movement using the FSS may reduce the risk of further spinal cord injury.