



RESEARCH SHOWCASE

Author 5

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General Abstract Information

Poster Title

The Effect of a Liner on the Dispersion of Backboard Interface Sacral Skin Pressure

Presentation Type

Poster

Research
Compliance >>



Number of Chairs

Space False

Electric False

30 Inch Table False

8 Foot Table False

Other Special Requests

Poster Abstract

Objective: To determine the effects of standard spine immobilization on healthy volunteers with respect to interface pressures and pain scores on a backboard with and without a gel pressure dispersion liner (PDL). **Design:** Prospective study
Participants/Methods: Forty volunteers between 18 and 60 who had no acute pain or illness, were not pregnant, and had no history of back problems were evaluated. An FSA pressure mapping system (Vista Medical, Canada) was used to monitor sacral interface pressures in volunteers lying on a standard backboard and on a PDL placed over the backboard. Measurements were carried out on both surfaces for all volunteers, on different days. Volunteers wore street clothes and were secured to the backboard with soft head-blocks and straps. Pressures were recorded every minute over a 40 minute period. Volunteers were asked to identify the location(s) of any pain and to indicate the corresponding severity using the VAS at the beginning and end of the assessment.
Results: The highest pressure generation was found at the sacral prominence of each subject with little variation over the assessment period. Peak interface pressures were higher on the backboard alone than with the PDL (mean 260mmHg vs. 188mmHg). Paired Student T-test showed this difference was highly significant ($p < 0.01$). The subjects systematically described more pain on the backboard alone than with the PDL. Pain scores increased over the assessment period both with and without the PDL.
Conclusion: Standard spinal immobilization can cause extremely high sacral interface pressures. Adding a pressure dispersion liner on the backboard decreased overall mean sacral pressures by 28% over a 40 minute period and reduced pain. Generation of early post-acute sacral decubiti may be related to the initial interface pressures generated while the patient is strapped to the backboard and may necessitate a change in backboard design.