ABSTRACT

Padded vs. unpadded spine board for cervical spine immobilization.

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OBJECTIVES: To determine whether padding the long spine board improves patient comfort, affects cervical spine (c-spine) immobilization, or increases sacral transcutaneous O2 tension.

METHODS: A prospective randomized, controlled crossover study of healthy volunteers was conducted over a two-week period. Participants included 30 volunteers with no previous history of c-spine injury or disease. The subjects were randomized to either padded or unpadded long spine board immobilization with serial measurements of discomfort (using a visual analog scale) and transcutaneous tissue O2 tension obtained at zero and 30 minutes. Measurements of ability to flex, extend, rotate, and laterally bend the c-spine were made using a goniometer. The subjects then returned a minimum of three days later to complete the opposite half of the study (padded vs. unpadded boards).

RESULTS: Subject discomfort was significantly reduced in the padded group compared with the unpadded group (p=0.024). There was no significant difference in flexion (p=0.410), extension (p=0.231), rotation (p=0.891), or lateral bending (p=0.230) for the two groups. There was no significant difference in the actual drop in sacral transcutaneous O2 tension from time zero to 30 minutes for the padded and the unpadded groups (mean drop 14.8% +/- 17.5% vs. 12.2% +/- 16.8%, respectively; p=0.906).

CONCLUSION: Adding closed-cell foam padding to a long spine board significantly improves comfort without compromising c-spine immobilization. Sacral tissue oxygenation does not appear affected by such padding for healthy volunteers.

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