



Spinal Immobilization

Have We Gone Too Far?

TWO CARS COLLIDE at a suburban intersection. One car contains three occupants, while the other contains four. The speed of impact is estimated to be approximately 20 mph, and all occupants of both cars are wearing their seat belts and shoulder restraints. The second car is equipped with airbags, but the impact is not enough to activate them.

All but one person are able to get out of their respective cars and walk around. One woman remains in her car complaining of a headache and neck pain. She appears to have struck the right side of her head on the passenger's window.

The paramedics arrive on scene and complete the required assessments. Two of the victims report some stiffness in their necks and backs, and all seven think it would be best if they went to the hospital to be "checked out." Three additional ambulances are requested.

Following standard protocols and because of the mechanism of injury, all seven patients are packaged on long backboards with rigid cervical collars and head immobilizers. They are subsequently transported to the emergency department where I practice.

In the ED, I complete a thorough head-to-toe physical examination of each patient. Only two have any cervical spine tenderness, and the remaining patients are removed from the spinal immobilization devices, treated and released. The two patients with cervical spine tenderness receive five-view cervical spine X-rays. The X-rays are negative, and the patients are discharged with a prescription for a muscle relaxant, an analgesic and a referral for a brief course of physical therapy. Fortunately, no serious injuries occurred.

The previous case scenario is a common occurrence in any hospital ED nationwide.

Over the past eight to 10 years, following the development of the Basic Trauma Life Support (BTLS) and PreHospital Trauma Life Support (PHTLS) courses, there has been a renewed interest by EMS personnel in detecting and preventing serious spinal injury.

In the United States today, if the mechanism of injury suggests even the slightest possibility of spinal injury—regardless of whether the patient has any signs or symptoms of injury—full spinal immobilization is typically performed. Full spinal immobilization is also used with elderly patients who suffer a brief syncopal episode and fall. The prevailing theory is that during the fall, they might have injured their necks and thus should be completely immobilized. By the time they reach the ED, these patients often are without complaint other than objecting to being tied to a sheet of plywood with a plastic collar wrapped around their arthritic necks.

The frequency with which prehospital personnel perform spinal immobilization reminds me of an old joke about the overprescription of the antibiotic amoxicillin. Many physicians empirically prescribe amoxicillin for virtually any childhood illness, and the joke is, "The indication of amoxicillin is the presence of a child." In EMS, it appears that the indication of spinal immobilization is the presence of a patient.

Granted, the results of improper prehospital care of a spinal-injured patient

can be catastrophic. However, have we gone too far the other way? Is the overuse of prehospital spinal immobilization causing our patients undue pain and increased cost when they only have relatively minor injuries? Is our use of spinal immobilization based on sound scientific evidence, experience and clinical practice? Or has it resulted from an overwhelming fear of being sued? Have the personal injury trial lawyers who entertain us so vividly on afternoon television now set the standard for prehospital spinal immobilization? It appears so.

I really hadn't thought much about our overuse of spinal immobilization until a recent trip to Australia. Australia has one of the most sophisticated and comprehensive EMS systems in the world. However, spinal immobilization is rarely used there—and then only in cases in which the potential for a spinal injury is very likely to exist.

During a short tour with the Queensland and New South Wales ambulance services, I did not see spinal immobilization applied. While the EMTs and paramedics are well-trained in the use of spinal immobilization, their decision to apply it is based on the patient assessment, including the mechanism of injury. Reflex spinal immobilization does not occur in Australia. Neither is the Australian legal system tied up with personal injury and medical malpractice, as it is in the United States.



Bryan E. Bledsoe, DO, is an emergency physician practicing in the Dallas area. He is also the director of emergency medicine at Baylor Medical Center in Waxahachie and is the medical director for 11 EMS agencies. Dr. Bledsoe is a former paramedic, is the author of numerous texts, including *Paramedic Emergency Care*, and is a JEMS contributing editor.

As the medical director for an ED and several EMS systems, I must respond to patient complaints, many of which are related to what patients consider unnecessary spinal immobilization. A letter from an elderly patient stated, "I fell down on the front porch. I knew I had broken my arm, but the EMTs placed me on a hard board with a stiff collar. I had to lay on the board for an hour and 15 minutes until they could X-ray my neck. My neck never hurt—just my broken arm. My arm doesn't hurt

anymore, but my back still hurts from the board and the ambulance ride." Such letters and comments are common.

Now don't get me wrong—I am not a heretic. I do believe that spinal immobilization is an essential prehospital skill and has a role in competent prehospital care. Furthermore, I believe the United States has the most modern and effective spinal immobilization equipment in the world. However, I have to question the frequency of its application.

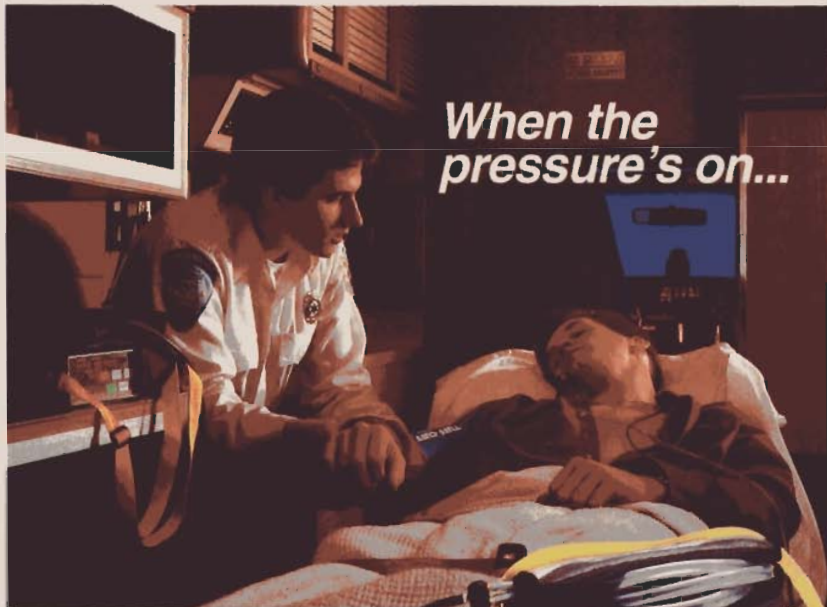
The trend in EMS over the past several years has been to ensure that the use of any procedure, equipment or drug in the field is based on sound medical research. This thinking caused us to re-evaluate the role and use of the pneumatic antishock garment, and it's time we take a similar critical look at spinal immobilization. Does the literature really support spinal immobilization to the degree that we apply it here in the United States?

But the real issue goes beyond spinal immobilization. It's directly tied to training and skill. It appears that EMTs and paramedics are slowly evolving into robotic technicians instead of thinking, skilled health care professionals. It is easier to train EMTs and paramedics to place every trauma patient on a backboard than to teach the assessment skills and knowledge necessary to safely determine which patients need spinal immobilization and which do not.

Is this where we want EMS to go? I think not. I hope not. EMS of the future will require well-trained, skilled and compassionate personnel. The EMTs and paramedics of the future must expand their skills and knowledge base to take their deserved place with other professional health care providers. This will require improved training, state-of-the-art equipment and appropriate medical control. The equipment and procedures they will use must be based on thorough scientific research accompanied by ongoing scrutiny. Anecdotal treatments, ineffective procedures and defensive medicine will have no place in the EMS of tomorrow.

It is time for EMS and its medical control physicians to evaluate all skills and procedures used in prehospital care. Which are effective? Which are cost-effective? Which are based on sound medical knowledge? I say we should begin by looking at spinal immobilization. Wouldn't it be more prudent to train EMTs and paramedics to properly determine which patients actually need spinal immobilization rather than rotely apply it to so many who don't?

If we can get through this, who knows what we can do. **U**



When the pressure's on...

**OscilloMate® 9000
Blood Pressure
Monitor—
more accurate,
more often.**

A blood pressure monitor you can count on — even in a moving ambulance.

Superior Accuracy. Reliable oscillometric technology and advanced motion artifact rejection capabilities.

Easier to Read, Operate and Maintain. Bright LED display. Take readings at manually selected times, or at preset intervals from 1-60 minutes. Exclusive message center provides step-by-step operating instructions, history, maintenance and troubleshooting prompts.

Lightweight and Portable. With cushioned carrier bag, weighs just 7 pounds.

Battery or AC Power. Sealed, lead-acid battery provides 100 readings on a full charge. *Cannot* be overcharged.

Optional Battery Charger. Permits battery swapping.

One-Year Warranty. Applies to both parts and service.

The OscilloMate 9000 — a new generation in blood pressure monitors that measures up — even when the pressure's on.

CAS MEDICAL SYSTEMS, INC.
TECHNOLOGY APPLIED TO MEDICINE
29 Business Park Drive, Branford, CT 06405
Telephone: (800) CAS-4414 • (203) 488-6056
FAX: (203) 488-9438

For More Information Circle #19 on Reader Service Card