Backcountry Management of Spinal Injury

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Outline

- Disclaimer
- Scope of the Problem
- Data
- Conflict
- “Current” Guidelines and Recommendations
- Summary
Disclaimer/ Reality Check

**TODAY'S COMMENTS ARE BROUGHT TO YOU BY...**

...THE COLOR
Disclaimer/ Reality Check
The Scope of the Problem

- Approximately 280,000 people in the US have permanent damage from SCI
  - Approximately 17,000 new SCI cases each year

National Spinal Cord Injury Statistical Center
The Scope of the Problem

- Over 2 million people/year in the US are fully immobilized with spinal precautions
The Scope of the Problem

- In a traditional EMT course, approximately 10% of didactic time and 25-50% of practical review/scenarios are dedicated to spinal cord management or have spinal immobilization as a major component.
The Scope of the Problem

- Backcountry evacuations of patients with full spinal protection are time consuming, expensive, hazardous to rescuers and patients.
The Data

**Mechanism of Injury**

*Meets all low-risk criteria?*
1. No posterior midline cervical-spine tenderness
2. No evidence of intoxication
3. A normal level of alertness
4. No focal neurologic deficit
5. No painful distracting injuries

- **YES** → No Radiography
- **NO** → Radiography

We have had, for YEARS, robust, specific, sensitive tests to detect/predict spinal injury.

**NEXUS (National Emergency X-Radiography Utilization)**
The Conflict

- There is no evidence...

- The concept of spinal immobilization has been predicated entirely on philosophical, theoretical, and medicolegal grounds, and the justification for its use remains unchanged despite more than 4 decades of widespread use.

WMS Practice Guidelines, 2014
The Conflict

- There is no evidence...
- Despite a lack of evidence clearly supporting spinal immobilization, an absence of documented cases of neurologic deterioration as a result of inadequate immobilization, and in the face of accumulating data challenging both the philosophical and theoretical grounds of immobilization, no randomized controlled trials have yet been performed in an attempt to validate its ongoing use or stratify any risk-benefit ratio.

WMS Practice Guidelines, 2014
The Conflict

- There is no evidence...

- Although the expert panel was unable to identify a single well-documented case in the literature of prehospital neurologic deterioration as a direct consequence of improper or inadequate immobilization, many cases have documented severe morbidity, and even mortality, secondary to immobilization itself.

WMS Practice Guidelines, 2014
The Conflict

- There is no evidence...
- *There is no evidence to support spinal immobilization in general, (yet) a great deal of time is spent educating EMTs in the process of spinal immobilization.*

Best Practice: Spinal Precautions, Montana Board Of Medical Examiners, Montana Prehospital Treatment Protocols, 2014
The Guidelines

- It has been pointed out that the evidence, and consequently our recommendations, fails to support immobilization in general. If this is true, why include an algorithm for immobilization at all? We realize that the evidence currently available, although likely accurate, is not high level. This, combined with the fact that many will consider the very notion of discarding immobilization in its entirety heresy, makes our algorithm a reasonable transition to a new paradigm while allowing (and hopefully promoting) further study to improve our understanding of spine injury, spinal protection, and the quality of evidence on which to base further recommendations.

WMS Practice Guidelines, 2014
The Guidelines: Backcountry

Wilderness Medical Society Practice Guidelines for Spinal Immobilization
The Guidelines: Backcountry

Spinal Assessment & Treatment

Scene Survey

MOI for Spine Injury?

- Yes
  - Awake?
    - Yes
      - Complete Primary & Secondary Surveys
    - No
      - Support patient’s spine during lifting, moving, & packaging. Consider side packaging patients with a suspected head injury.

- No
  - Complete Primary & Secondary Surveys

Awake?

- Yes
  - Complete Primary & Secondary Surveys
  - Pass NEXUS or CCR?
    - Yes
      - Ambulatory?
        - Yes
          - Carry. Use extreme caution if neurological deficit is present.
        - No
          - No Spine Injury
    - No
      - No Spine Injury
  - Ambulatory?
    - No
      - Evacuate for definitive evaluation. Consider self-evacuation or carry. Use extreme caution if neurological deficit is present.
    - Yes
      - No Spine Injury
      - EVAC PRN
Summary

- Shift in Understanding and Emphases allows for more flexibility and common sense
  - Most damage probably occurs at time of injury
  - On scene management can focus on other priorities
  - Self/ Assisted-evacuation is not only acceptable but often preferable
  - A “Board” is viewed more as a transportation vs. immobilization device, and should be constructed and treated as such