Sideline C-Spine Injury: To remove or not to remove, that is the question

MARCIA FAUSTIN, MD
UCSD PRIMARY CARE SPORTS MEDICINE FELLOW

SARAH MERRILL, MD
UCSD PRIMARY CARE SPORTS MEDICINE FACULTY

JAMES SMUDA, MA ATC CSCS
UCSD HEALTH ATHLETIC TRAINER

CONTROVERSY

- Regarding the management of on-field management of possible c-spine injury

GOALS

- To create a consensus for management protocols among athletic trainers, team physicians, EMS and Emergency Room physicians
- To solicit EMS input

NATA Recommendations

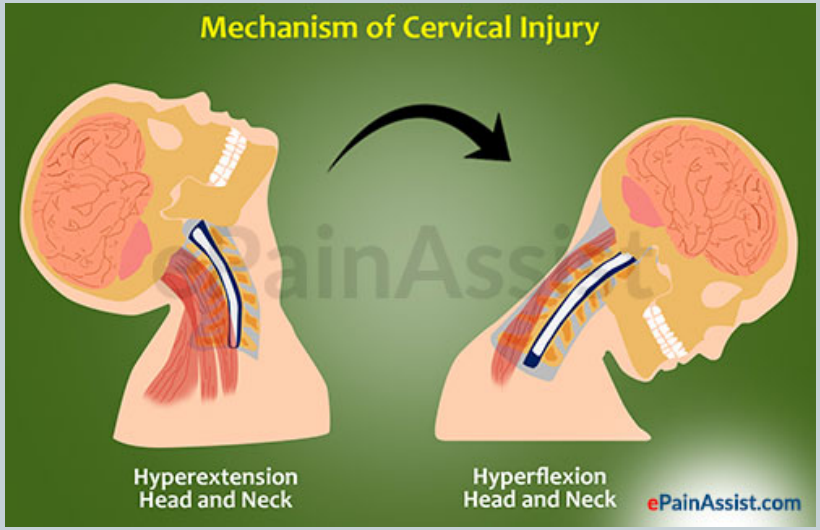
- 12,500 new cases each year
  - 9% occur during sports or recreational activities
- Update statement in August 2015 from 1998
- Task Force includes 21 Organizations

NATA Recommendations

- Task Force includes 21 Organizations
  - American Academy of: Family Physicians, Neurology, Orthopedics, Pediatrics
  - American College of: Emergency Physicians, Sports Medicine, Surgeons (Trauma)
  - AMSSM, AOSM
  - Canadian athletic therapists' assoc.; College Athletic trainers society, NATA
  - National Assoc of: EMS Physicians, EMTS, intercollegiate athletics, State EMS Officials,
  - National Collegiate Athletic Assoc
  - National Federation of State High School Assoc., North America Spine Society, Professional Football Athletic Trainers Society
  - USOC

NATA Recommendations

- **Sports included:** Football, Hockey & Lacrosse
- **Recommendation 4:** Protective athletic equipment should be ***removed prior to transport*** to an emergency facility for an athlete-patient with suspected cervical spine instability.



NATA Recommendations

- **Recommendation 5:** Equipment removal should be performed by at ***least three*** rescuers trained and experienced with equipment removal at the earliest possible time.
- If fewer than three people are present, the equipment should be removed at the ***earliest possible time*** after enough ***trained individuals*** arrive on the scene.

NATA Recommendations

- Rational for consideration of equipment removal:
  - Advances in equipment technology
  - Removal should be performed by those with highest level of training
  - Often, the ATC may have greater exposure to equipment removal training than other medical team member or hospital staff
  - Expedited access to the athlete-patient for enhanced provider care
  - Chest access is prioritized

NATA Recommendations

- **Further updated recommendations:**
- **Recommendation 8:** Spine injured athlete – patients should be transported using a rigid immobilization device.

- **Recommendation 9:** Techniques employed to move the spine injured athlete-patient from the field to the transportation vehicle should minimize spinal motion.

NATA Recommendations

- **Recommendation 11:** Spine injured athlete-patients should be transported to a hospital that can deliver immediate, definitive care of these types of injuries.

American College of Sports Medicine

- Recommend ***not*** to remove helmet or pads from unconscious athlete or athlete with neck injury
- Face mask removed
- Helmet, chin strap and shoulder pads should be left in place
- For CPR
  - Remove face mask and chin strap, ***keep*** helmet in place

AMSSM

- Feb 2013, position statement: “Concussion in Sport”
- “If cervical spine injury can not be eliminated, neck immobilization and immediate transfer to emergency department…”

UPTODATE

Field care and evaluation of the child or adolescent athlete with acute neck injury

- 3-25% of patients with SCI develop neurologic deficits secondary to manipulation during transport
- Immobilization of C-Spine
  - ATLS – “no effort by made to reduce an obvious deformity”
  - If Prone → log roll to supine

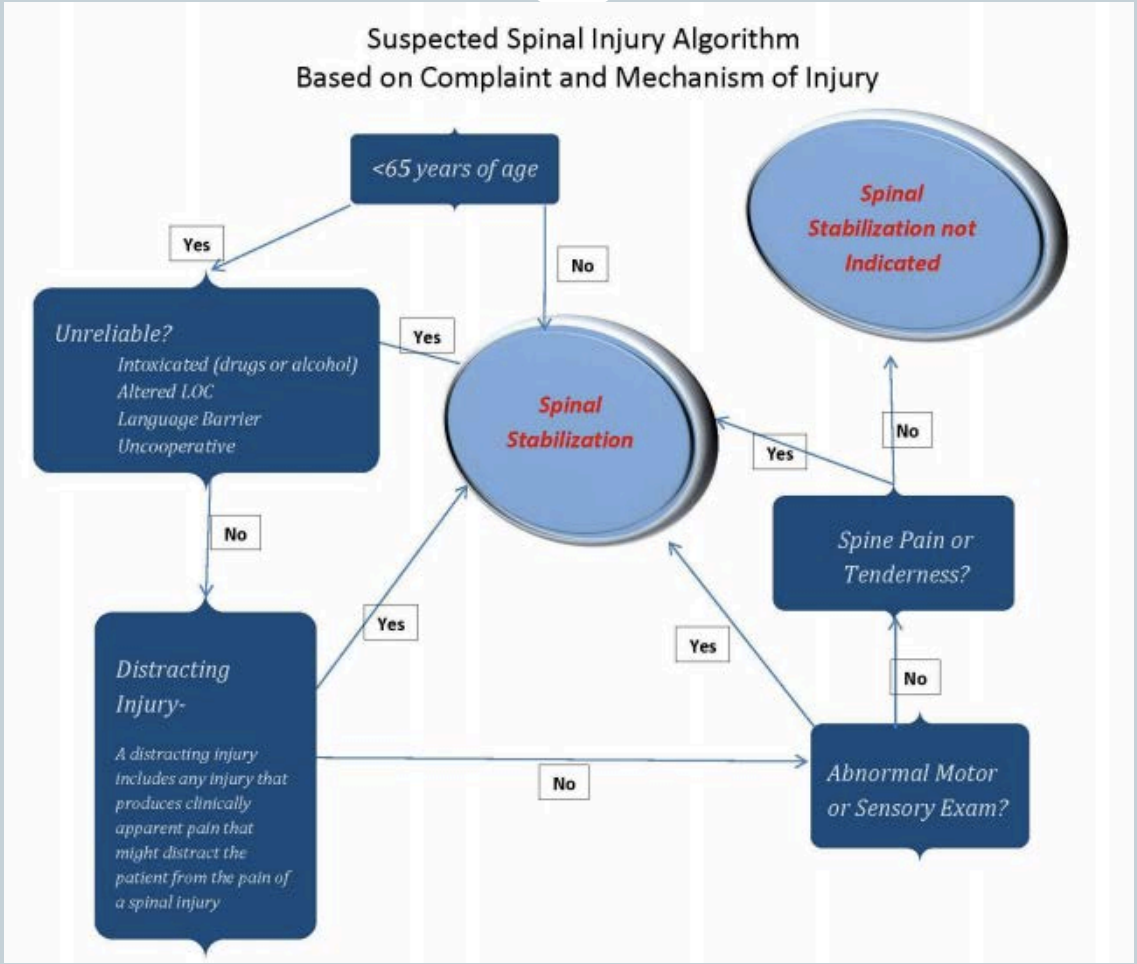
UPTODATE

- Indications for helmet removal:
  - Immobilization of the helmet does not immobilize the head
  - After removal of the face mask, airway cannot be controlled, nor ventilation provided
  - The face mask cannot be removed
  - Helmet prevents immobilization in an appropriate position for transport
- Helmets without shoulder pads
  - Ex. Batting helmets, bike or motorcycle helmets
  - Removed to allow neutral position of c spine

EMS

- Spinal stabilization protocol (S-104):
  - Backboards should be limited to extrication whenever possible; with supine, neutral, in-line stabilization maintained on the gurney during transport (per Dr. Christopher Kahn)

County of San Diego EMS (7/1/2016)



Conclusion

- What stance will we take?
  - Not clear cut
  - EDUCATION
- How do we disseminate this information to involved parties: athletic trainers, coaches, EMS, physicians and other medical personnel?
  - Create protocol and algorithms

Questions and Comments

- This is an ongoing project, we would truly appreciate your input on the difficulties you encounter with removing equipment versus delivering care with equipment in place

THANK YOU!

MARCIA FAUSTIN, MD
FAUSTINMARCIA@GMAIL.COM

SARAH MERRILL, MD
SEMERRILL@UCSD.EDU

JAMES SMUDA
JSMUDA@UCSD.EDU

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