Clinical Case Report:
Cervical Spine Burst Fracture in an Intercollegiate Football Player

Sports Medicine Symposium:
Return to Play
Kalamazoo, MI
July 29, 2016

Drew Willson MS, ATC
Assistant Athletic Trainer
University of Georgia
Athens, GA
Disclosure/Privacy

• I have no financial or industry relationships or conflicts of interest related to this presentation to disclose.

• I have also received permission from Devon Gales to use his name and images associated with this specific case
Overview:

- Review of Injury Mechanism
- Presentation of Injury
- Initial Care
- Rehabilitation
- Considerations for the Future
Spinal Injuries in Football 2015

• Spine injuries 1.3 per 100,000
• Permanent quadriplegia 0.4 per 100,000
Primary Mechanism

- Axial loading
- Flexion
- High velocity impact
Axial Loading/Flexion

- Normal cervical spine has a curve, allowing it to absorb shock
- When neck is flexed slightly forward, the cervical spine becomes straight
- When a force is applied to the top of the head in this position the energy is transmitted along the axis of the cervical spine
Medical “Time Out”

- Take time to conduct *before* each athletic event
- Same concept as surgery time-out or athletic time-out
- Miscommunication may lead to potentially catastrophic errors
- Review EAP, equipment available, care options are reviewed with personnel

University of Georgia
Sports Medicine
History

• 21 Y/O BM
• Redshirt SOPH DB
• 5’9”
• 160 lbs.
• No previous hx of spinal/head injury
Presentation of Injury

- Alert, never unconscious
- Neck pain
- Unable to move or feel LE
- Arm movement
- Paresthesia UE
On-Field Management

- Stabilization of C-Spine
- Initial Evaluation
- Removal of Equipment
- Package for Transport
- Transport to Ambulance
Initial Hospital Care

- CT, MRI, X-ray
- C6 Burst Fracture
- Stabilization over night
- Surgery next morning
Surgery

• Anterior-posterior fusion
• Anterior with bone
• Posterior with rods and screws
Post-Surgical Care

• ICU for 2 days
• Transported to Shepard Center in Atlanta on 9/29/15
• Started light rehab on 10/2/15
• Full rehab begins on 10/5/15
Initial Rehabilitation

• Six days a week
• 8-5 w/lunch break
• Start small:
  – Finger Dexterity
  – Elbow Flexion/Extension
  – Re-learn ADL’s such as getting in and out of bed, eating, etc.
• Moved to Out Patient Center on Jan. 4th
Rehab Progression

- Strengthening exercises
- Balance training
- Becoming more active
- Building on previous exercises
Shepard Step

- Body Weight Supported Locomotor Training
- Partial Weight bearing
- Control percentage of bodyweight
Post-Shepard Rehab

• Moved to Baton Rouge, LA 2/26/16
• Specific home rehab program written by Shepard Center
• Shoulder strengthening
• Core stabilization
• Cardio on arm bike
Everyday Activities

• Hold cellphone, text
• Self-propel in wheelchair
• Learn how do drive specially designed car
Current Rehabilitation

• Functional Strength
  – Moving chair forward and backward

• Upper Extremity Strength and Endurance
  – Ropes, free weights
Future Considerations

• Continue to work on LE function and movement
• New home that is wheelchair friendly
• Increase awareness on preventing spinal cord injuries
Questions??