MANITOU SPRINGS, CRYSTAL PARK, AND TELLER COUNTY
EMERGENCY MEDICAL SERVICES, MANITOU SPRINGS
Medical Protocol
Field Closed Dislocation Reductions

Types of Reductions Allowed (not including standard EMS care for pulseless, etc extremities):
A. Shoulder
B. Patella
C. Digit

Information Needed:
A. Elapsed time from injury.
B. Distal pulses present as well as any pallor or paresthesia of affected limb or area.

Precautions:
1. Scene safety
2. Continually monitor neurovascular status of the limb
   2.1. Be prepared to transport patient by ambulance or helicopter if neurovascular compromise occurs at any point during the procedure.
3. Correctly identify and differentiate shoulder dislocation from AC separation, clavicle fracture and proximal humerus fracture prior to attempted reduction.

Treatment:
A. Standard EMS evaluation and treatments.
B. Oxygen as needed.
C. Detailed assessment including neuromuscular status of affected limb.
D. Establish vascular access if EMT-IV or above.
E. Inform patient of the procedures risks, benefits, and alternatives. Obtain verbal informed consent. Risks include but are not limited to:
   a. Recurrent dislocation.
   b. Damage to nerves, blood vessels, and muscles.
   c. Fractures.
   d. Failure to reduce.
F. CONTACT MEDICAL DIRECTION FOR APPROVAL FOR CLOSED REDUCTION ATTEMPT IF POSSIBLE (Attempts may be made in wilderness and ERT situations where medical direction cannot be contacted secondary to communications limitations.) Perform primary reduction procedure (see addendum for Dislocation Guidelines for Reduction)
G. If unsuccessful after 3 reduction attempts, immobilize joint in position of comfort and transport to the nearest appropriate medical facility.
H. Immobilize joint with sling/swath, or other appropriate immobilization method after reduction.
I. Reassess CMS in affected limb and continue to assess during extrication and transport.
J. Send patient for medical evaluation (whether reduction was successful or not).
K. Document full procedure INCLUDING discussion with patient regarding risks, benefits, and alternatives of attempted reduction AND verbal consent from the patient.
L. Report reduction attempt to your agency QA/QI for assuring 100% review of all cases.
PAIN CONTROL DURING ATTEMPTED REDUCTIONS (PARAMEDIC LEVEL ONLY)
1. The patient may receive appropriate pain control with narcotic pain medications per pain management protocols during reduction attempts.
2. Ketamine will NOT be used for pain control during reduction attempts.
3. The paramedic MUST ASSURE THAT PROCEDURAL SEDATION IS NOT USED DURING ANY REDUCTION ATTEMPTS!

ADDENDUM (CHECKLIST FOR FIELD CLOSED DISLOCATION REDUCTIONS & TECHNIQUES)
1. Don’t be distracted by the deformed extremity! Perform a thorough primary survey!
2. Stabilize patient: Attending to ABC’s first.
3. Assess skeletal injuries during head-to-toe secondary survey. (AND DOCUMENT ALL OF THE BELOW KEY EVALUATIONS)
   3.1. Spine and pelvis first, then extremities
   3.2. Deficits: Distal neurovascular exam.
   3.3. Deformities: Dislocation and fractures.
   3.4. Dysfunction: Range of motion and weight bearing.
4. Weigh risks and benefits of attempt at field reduction:
   4.1. Benefits: easiest to reduce early after injury; reduced pain following successful reduction with improved patient condition, cooperation and ease of transport, reduced risk of neurovascular injury
      4.1.1. Patient still needs to be splinted and transported in position of comfort whether reduction attempt successful or not.
   4.2. Risks are very few as long as application of proper reduction and repositioning technique (slow, gentle traction).
      4.2.1. Risks include BUT ARE NOT LIMITED TO transiently increased pain, displaced bone fragments, potential to worsen neurovascular injury, failure to reduce, and bone, nerve, blood vessel, new bone, and muscular injury.
5. If comfortable with the likely clinical condition and reduction technique, the provider may make 1-3 attempts in the field for shoulder, digital, and patellar dislocations.

TIPS FOR SUCCESSFUL REDUCTIONS:
1. Properly position patient prior to reduction attempt to improve outcome.
2. Be gentle. Use slow movements when repositioning, apply slow, steady traction during reduction attempt.
3. Be patient. Many reductions can take 10-15 minute or more.
4. Patient relaxation is key to many reductions. Patients relax at different speeds.
5. STOP reduction attempt if significantly increased pain or patient resistance.
6. Always document neurovascular examination before and after reduction attempts including motor, sensory and circulatory status.

ALLOWED DISLOCATION TECHNIQUES
Shoulder
1. Anterior-inferior dislocations account for >95% of dislocations
   1.1. Mechanism is usually external rotation and abduction (not direct blow).
   1.2. May be recurrent problem.
   1.3. Arm usually held away from the body (unlike fracture held against chest wall).
   1.5. Multiple reduction methods:
       1.5.1. Recommend Method: gentle external rotation with a flexed elbow THEN gradual ABDuction of the arm away from the body to the position that the patient is raising their hand, then rotating the arm forward and down (external rotation with modified Milch).
       1.5.2. Other options: Stimson method (laying patient prone with weight in the affected hand for gentle weight-based traction) or scapular manipulation. Both these techniques may be combined.
   1.6. Immobilize with sling and swathe.
   1.8. Note: posterior dislocations rare (seen in seizures and electrical injuries).
       1.8.1. These are difficult to reduce, and should NOT be performed in the field.
   1.9. Don’t confuse with AC separation or isolated humeral head fracture. If the patient has extreme pain with the reduction techniques, consider these indues and discontinue reduction attempts.
   1.10. Don’t overlook associated injuries.
       1.10.1. Rib fractures, clavicle fractures, pneumothorax need to be considered

Digits
1. Obvious deformity and limited movement and present.
2. Axial traction and splinting is used for reduction.
**Patella**

1. Most commonly dislocated laterally.
2. Flex the hip and knee while applying gentle traction to the lower leg.
3. May need gentle sideways pressure on the patella pushing in the direction of attempted reduction.
4. Immobilize knee with straight-leg immobilizer/splint after reduction.
5. May be able to ambulate after immobilizer applied for wilderness extrications.

October 1, 2014

Jeremy DeWall, MD, NRP
Medical Director