Difficult Dislocations

Gregory W. Hendey, MD, FACEP
Professor of Clinical EM
UCSF Fresno

Objectives

- To demonstrate reduction techniques for the following dislocations:
  - Ankle
  - Hip
  - Shoulder

Top 5 reasons some dislocations are difficult

- Time
  - Muscle spasm
- First dislocation
  - Recurrent dislocation = easier reduction
- Fracture / other injuries
- Inadequate sedation / analgesia
- Reduction technique

Sedation options:

- No sedation (or minimal)
- Nerve block or Intra-articular injection
- Procedural sedation
  - Midazolam / Fentanyl
  - Ketamine
  - Methohexital
  - Etomidate
  - Propofol
Case 1:

- 24 yo M semi-pro football player
- Someone “rolled over” his ankle from behind

Ankle Dislocation

- Usually posterior
- Often associated with fracture
- Reduction:
  - Hand behind heel, and dorsal foot
  - Anterior traction, plantar flexed
  - Then 90° dorsiflexion
For the difficult reduction:

- Flex the knee
- Exaggerate the injury

**Case 2:**

- 45 year old female passenger in MVA c/o hip pain
- Exam: hip flexed, internally rotated
Hip dislocation “should be reduced within 6 hours” to reduce which complication?

1. Acetabular fracture
2. Avascular necrosis
3. Deep venous thrombosis
4. Non-compliance with Core Measures

- Fracture (approximately half)
  - Pelvis, acetabulum, femoral neck
- Avascular necrosis, femoral head
  - Time matters!
  - Reduction within 6 hours

**Reduction**

- **Stimson technique**
- **Allis technique**

**The Captain Morgan technique:**

Above: illustration by Francis Fung
Right: reproduced with thanks to and permission from Diageo, PLC
Case 3:

- 30 year old male reached up for a can on a shelf and felt shoulder dislocate
- Exam: yep, it’s dislocated.
- X-ray?
9 studies say “No”

- Shuster, *CJEM*, 2002
- Emond, *Acad Emerg Med*, 2004
- Emond, *CJEM*, 2009

Shoulder dislocation

- **Types:**
  - 97% Anterior
  - 1-2% Posterior
  - <1% Luxatio Erectae

- **Sedation vs Intra-articular injection**

Intra-articular Injection
Methods of Reduction

- External Rotation (Hennepin)
- Snowbird
- Traction/Counter-traction
- Stimson
- Milch
- Scapular Manipulation
- Forward Elevation
- Eskimo
- Spaso

External Rotation

- Leidelmeyer (Virginia, 1977)
- Mirick (Hennepin, 1979)
Plus Milch

- After external rotation:
  - Raise arm into full overhead position, with traction
- Then return arm to starting position

Bosley (1979)

Scapular Manipulation

- Bosley (1979)
- Move glenoid relative to humeral head
Plus Stimson:

- Hang weights or pull arm down
- Internal / external rotation
- May also try in sitting position
Summary:

- Techniques for difficult reductions:
  - Ankle
  - Hip
  - Shoulder