Shoulder Dislocations and Separations in Youth Sports

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Objectives

- Review common findings, diagnosis, associated injuries and special considerations in young athletes with shoulder dislocations and separations.

- Review treatment options and return to play guidelines for athletes with shoulder dislocations and separations.
Figure 17.19 The AC joint
Shoulder Dislocation

- One of the most common traumatic sports injuries
- Nearly 90% are anterior dislocations
  - Excessive external rotation/abduction force
- Posterior account for most of other dislocations
  - Humeral head driven posteriorly requiring great force
- Inferior dislocation is rare
Shoulder Dislocation

- **Evaluation**
  - History of sudden acute shoulder pain from direct or indirect trauma
  - Possible sensation of “popping out”
  - Prominent humeral head with a hollow under acromion
  - Loss of normal smooth contour of shoulder
  - Typically unwilling to move affected arm – “cradle it”
Shoulder Dislocation

- **Evaluation**
  - **Axillary nerve** is most commonly injured nerve associated with anterior dislocations
    - Evaluate sensation to lateral shoulder with all acute dislocations
  - Apprehension test – later
  - Vascular exam – distal pulses and capillary refill
  - Xrays – multiple views
    - Ideally prior to reduction – rule out fracture
    - Post-reduction

Shoulder Dislocation

- Anterior Dislocation Injuries
  - Bankart lesion
    - Damage to the attachment of the labrum to anterior glenoid
    - Associated fracture of anterior glenoid rim (boney Bankart)

Shoulder Dislocation

- Anterior Dislocation Injuries
  - Hill-Sachs’ lesion
  - Compression fracture of posterior humeral head
  - Tear of the superior or posterior labrum

Case

- 18 year old male skateboarding
- Went off a jump, lost his balance and stuck his arm out to catch himself
- Complains of severe shoulder pain
- Numbness on lateral aspect, otherwise normal
- Holding arm away from body
Shoulder Dislocation

- **Treatment**
  - Timely reduction – muscle spasms
  - Multiple methods using traction/flexion/ER
    - Self reduction
    - Traction/countertraction
    - Gravity (modified Stimson’s method)
  - Injection of 10-15ml xylocaine
Video

http://www.youtube.com/watch?v=Z5v8Tb2-I1Y
Shoulder Dislocation

- Risk of Recurrence – first time dislocation
  - Under 20 years old – 70-85%
  - 20-40 years old – 50-70%
  - Over 40 years old – 10-15%
Shoulder Dislocation

- Treatment
  - Immobilization
    - Do not place in traditional sling in internal rotation
    - **External rotation** to approximate Bankart lesion
      - 3 weeks
      - Reduces risk of recurrence
  - Progressive motion/strengthening program
  - Avoid abduction and external rotation for 6 weeks
Case

- 15 year old male snowboarding
- Fall on abducted shoulder from about 6 ft.
- Patient is holding arm away from body
- Ski patrol states it is a dislocated shoulder
- States he felt a pop and thinks shoulder is dislocated – his friend had one yesterday
Shoulder Dislocation

- Special considerations for young athletes
  - High incidence of recurrence <30
    - 60-90%
    - Chronic instability
    - Early surgical intervention improves outcomes
  - Rule out displaced fracture in skeletally immature
Shoulder Dislocation

- Return to Play
  - Pain-free
  - ROM and strength at least 90% uninvolved shoulder
  - Able to perform sport specific drills
  - Use of brace as needed
Shoulder Separation

- AC joint is a very common site of injury in athletic population
  - Stabilized by:
    - Joint capsule
    - Acromioclavicular ligaments
    - Coracoclavicular ligaments
      - Trapezoid and Conoid
    - Deltotrapezial fascia
Shoulder Separation

Rockwood classification

Quillen, D., Wuchner, M., Hatch, R.; Acute Shoulder Injuries; AAFP; 2004; 70(10); 1952.
Shoulder Separation

- **Evaluation**
  - **History** – direct blow to acromion with humerus in adducted position
  - **Inspection/Palpation** – possible step off and or spring
    - **Asymmetry**
      - Swelling
      - Size
      - Position
      - Shape
Shoulder Separation

- Evaluation
- Cross-arm test
- Neurovascular examination
- X-ray – weighted?
Case

- 22 year old male snowboarding
- Went off a box doing trick and landed on his side with shoulder adducted
- Complains of severe shoulder pain
- Denies numbness or tingling
- No previous dislocations or shoulder problems
Shoulder Separation

- Treatment
  - Rest, Ice
  - Sling for pain relief
    - 2-3 days for type I
    - Up to 6 weeks for severe type II or III injury
      - Consider Kenny-Howard sling for type III
Shoulder Separation

- Treatment
  - Range of motion drills
    - Codman circumduction
    - Wall walking
  - Isometric strengthening exercises
  - Injection
  - Type IV, V, VI – surgical repair
Shoulder Separation

- Return to Play
  - Type I injury
    - 1-3 weeks
    - Full ROM and strength, nearly pain free
    - Doughnut or spider pad under shoulder pads
    - Consider injection of local anesthetic in mature athletes
  - Type II or III injury
    - 4-6 weeks
    - Full ROM and strength, nearly pain free
    - Delay injection 3 weeks post injury
Case

- 11 year old male fell off a swing at playground
- No previous shoulder problems
- Unsure of shoulder position
- Pain
  - Palpation of distal clavicle and AC joint
  - All movement of shoulder
- Neurovascular exam unremarkable
Shoulder Separation

- Special considerations in young athletes
  - Distal clavicle fracture v. AC sprain
  - Chronic AC pain
    - Clicking with push ups
    - Osteoarthritis
Shoulder Separation

- Special considerations for young athletes
  - Distal clavicle osteolysis
    - Recurrent pain associated with lifting
  - Impingement syndrome
Resources

1. Bedi, A., Ryu, R.; The Treatment of Primary Anterior Shoulder Dislocations; AAOS Instructional Course Lectures; 2009; 58; 293-304.
Questions?