CT Children's CLASP Guideline

Adolescent Shoulder Instability

INTRODUCTION

The shoulder joint has the greatest range of motion of any joint in the body and the highest risk for injury, accounting for 50% of all dislocations within the body.
Shoulder instability in an adolescent athlete can be either **atraumatic** or **traumatic**.

- **Traumatic instability:** Single event that results in an unexpected subluxation, a feeling of the shoulder slipping out of place, or dislocation resolved by a spontaneous or manual reduction.
  - Anterior dislocations are common in young physically active athletes. The mechanism is typically a fall on an outstretched hand with the shoulder in abduction (ABD) and external rotation.
    - Posterior dislocations are less common. The mechanism is typically a fall in forward flexion, shoulder adduction (ADD) and internal rotation.
  - Risk factors for recurrent traumatic instability include male gender, < 25 years of age, participation in a contact sport, and the presence of underlying pathologies. Patients with traumatic instability and no atraumatic/global instability are more likely to have underlying pathology.
- **Atraumatic instability**: Congenital or acquired multidirectional instability (MDI). Patients with congenital causes of atraumatic instability often present with global laxity. Patients with acquired causes of atraumatic instability are typically over-head athletes (e.g. swimmer, baseball player) subjected to repetitive microtrauma. Atraumatic instability is also common in younger females with some degree of hyperlaxity.

INITIAL EVALUATION AND MANAGEMENT

INITIAL EVALUATION:

- Targeted history and physical exam.
  - Rule out cervical spine injuries or life threatening conditions
  - Ask about numbness or tingling in distal extremity
  - Mechanism of injury should indicate direction of instability
- Appropriate provocative testing to determine direction of instability (anterior, posterior, and/or inferior) – ***see Appendix A: Provocative Testing Demonstration***
- Shoulder radiographs (AP, axillary, scapular Y) - Axillary view is essential to make sure the glenohumeral joint is reduced.

INITIAL MANAGEMENT:

- **Atraumatic Instability:** 3-4 week course of physical therapy to regain motion and strengthen peri-scapular and shoulder girdle musculature to aid in dynamic stabilization.
- **Subluxation:** Decrease activities that result in pain, restore normal range of motion
- **Dislocation:** Closed reduction, immobilization if warranted to decrease pain OR refer to Elite Sports Medicine for initial management

For management of first-time dislocators, ***see Appendix C: First Time Dislocators***

WHEN TO REFER

ROUTINE REFERRAL FOR ELITE SPORTS MEDICINE:

- First-time dislocators (within 3 days)
- Recurrent dislocators
- Atraumatic instability that does not respond to 3-4 weeks of physical therapy and rest

HOW TO REFER

Referral to Elite Sports Medicine via CT Children's One Call Access Center
Phone: 833.733.7669 **Fax:** 833.226.2329

Information to be included with the referral:

- Any pertinent clinic notes
- Any shoulder radiographs and other imaging if applicable.

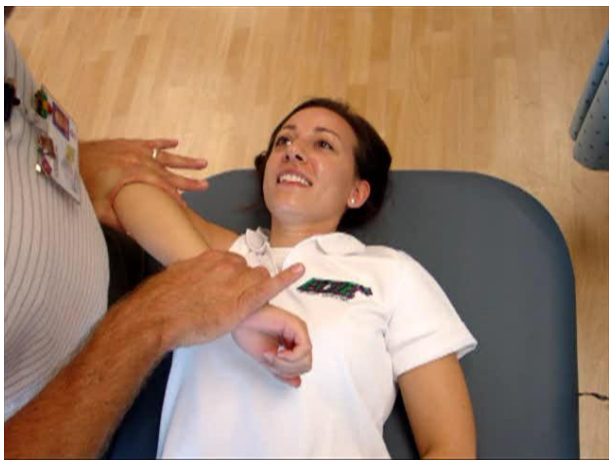
WHAT TO EXPECT

What to expect from CT Children's Visit:

- MRI or CT scan for evaluation of concomitant pathologies such as labral tears, capsular lesions and humeral head deformities when appropriate
- Proprioception and Functional Testing of the unstable shoulder
- If appropriate, surgical conversations with patient and family

APPENDIX A: Provocative Testing Demonstration

Anterior Apprehension Sign: Athlete is sitting or supine on table. Shoulder is placed in 90 degrees abduction. Clinician begins to externally rotate shoulder until the athlete expresses or shows a sign of apprehension.



Posterior Apprehension Sign: Athlete is sitting or supine on table. Shoulder is placed in 90 degrees forward flexion and slight adduction. Clinician applies a posterior directed force to the shoulder until the athlete expresses or shows a sign of apprehension or pain.

Sulcus Sign: Athlete is sitting with the shoulder resting at their side. Clinician applies a longitudinal traction on the arm. A positive test will reveal a noticeable sulcus superiorly to the head of the humerus. Athlete may report a "slipping" of their shoulder.

APPENDIX B: Use of Sling

1. Bankart Lesion

- A Bankart lesion is a detachment of the labrum from the glenoid. This is found in 94% to 97% of initial shoulder dislocations. (See Figures 1 & 2) The glenoid is the golf tee on which the humeral head, "the ball," sits upon. The labrum is the suction cup that lines the rim of the glenoid to deepen the cup.

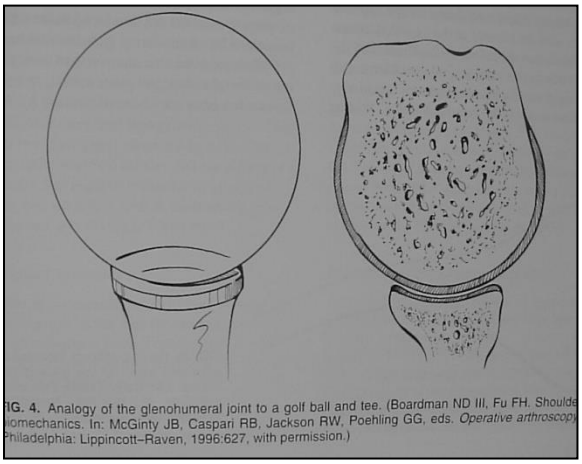


Figure 1

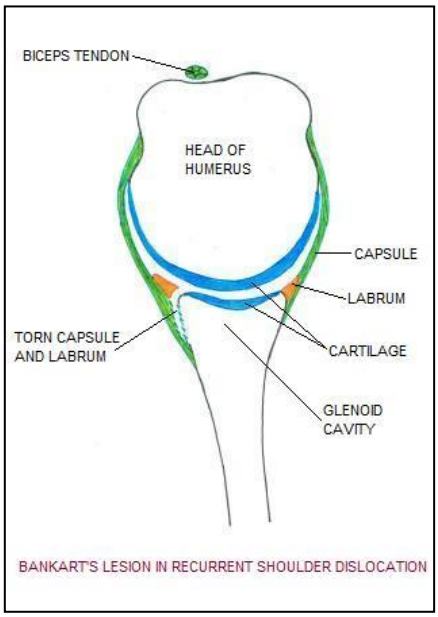


Figure 2

2. Use of Sling

- Immobilization with a sling initially can aid in pain control and can help prevent recurrent instability. Immobilization in external rotation has been tried but is difficult to control compliance.

APPENDIX C: First Time Dislocators

- Risk of recurrence after first time traumatic dislocations is incredibly high in a young active population.
- Possible candidates for surgical stabilization are young athletes involved in collision/contact athletics at high risk of recurrence