



Thrower's Shoulder w/ Dr. Freehill, Podcast Notes

Background

- Shoulder injuries account 30% of all injuries
- Results in loss/alterd playing time in 69% injured collegiate pitchers
- 60N/m of shoulder torque seen at maximal ER, up to 90N torque terminates shoulder ER & IR

Adaptive changes

- Relative increase in ER + decrease in IR
 - Total arc stays same
- Internal rotation loss
 - GIRD >20deg IR loss
 - Possibly due to capsular tightness> may lead to Type II SLAP tears
 - Pitchers w/ GIRD 2x likely to sustain injury
- External rotation Loss
 - If not at least 5 more degrees of ER than non-throwing side
 - ER is protective to thrower shoulder
- Humeral retroversion
 - Possible loss of retroversion de-rotation (start around 74 degrees retroverted as fetus)

Phases of throwing

Motion loss pathophysiology

- Internal impingement
 - Walch et al- PS cuff and PS labrum in between GT and glenoid rim
 - Burkhart- peel back mechanism- posterior capsule contracture> PS HH shift> SLAP
- Scapular dyskinesis
 - Scapular protraction seen w/ shoulder pain (tight upper trap + pec major)
 - SICK scapula- scapular malposition,, inferior medial border prominence, coracoid pain, scapular dyskinesis
- GIRD
 - Loss 20deg IR
- Kinetic chain

- Hip inflexibility + IR loss

History

- Pain/soreness, loss of throwing velocity, loss of control
- Timing of pain onset
- Mechanical symptoms, locking/clicking

Physical Exam

- Assess kinetic chain (Hip IR/ER, single leg squat)
- Scapular dyskinesis
 - Scapular retraction test + scapular assistance test
- TTP
- ROM (shoulder abduction + adducted)
- RTC strength
- Anterior/+posterior labrum testing

Imaging

- Xrays
- MRI
- MRA w/ arm ABER

Non-op treatment

- GIRD- sleepers stretch, most respond well
- Kinetic chain- PT
- Scapular dyskinesis- PT- serratus anterior + lower trap strengthening
 - McConnell taping
- RC + labral tears- PT

Operative treatment

- Last resort after failed non-op
- GIRD- posterior capsule release (goal to expose muscle belly of infraspinatus)
 - Concurrent SLAP repair may be beneficial
 - Arthroscopy to check impingement (anterior portal)
 - Probe capsule for thickened area + release 8-10mm capsule
 - Lack of impingement before 120deg ER> signifies adequate release
- RTC tears
 - Partial thickness + full thickness tear treatment- controversial
 - Partial tears <50%- debridement, >50% repair
- Labral tears
 - Type I- debridement
 - Type II- repair
 - Type III (bucket handle)- debridement + removal of bucket handle tissue
 - Type IV- bucket handle component that extends into biceps- SLAP repair + BT

Post-op protocol?

Sources:

Cole III, W. W., Savoie III, F. H., & O'Brien, M. J. (2021). Assessment of Motion Loss in the Thrower's Shoulder. *Operative Techniques in Sports Medicine*, 29(1), 150804.