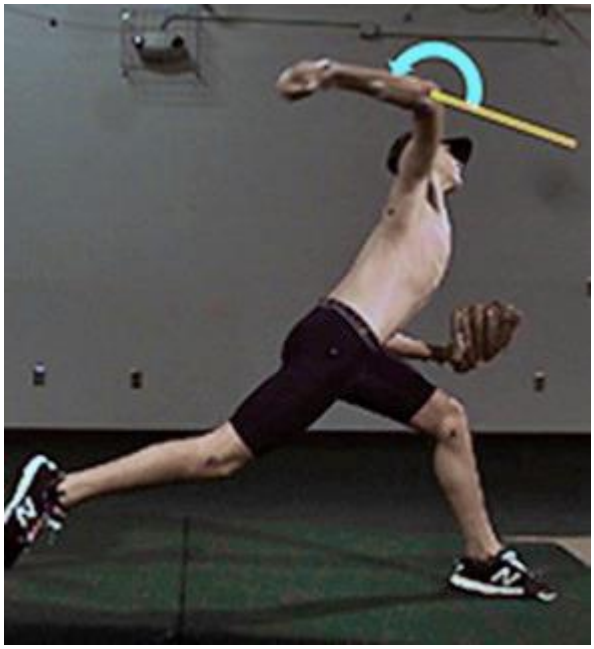
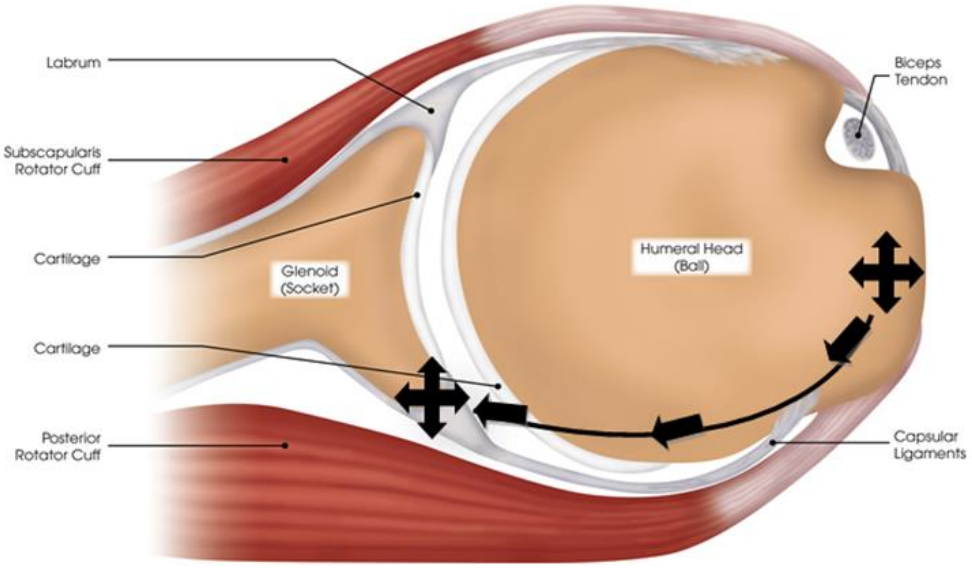
STEVEN CHUDIK MD
SHOULDER, KNEE & SPORTS MEDICINE

Internal Impingement

Internal impingement, or posterior-superior glenoid impingement, describes painful contact between the greater tuberosity of the humerus (arm bone) and the posterosuperior glenoid (socket). When the arm is cocked backwards to throw, the humerus rotates until there is contact between the labrum on the glenoid and the undersurface of the rotator cuff muscles on the humeral head. This repetitive contact results in a tearing of the labral and rotator cuff tissues. In addition, repetitive throwing can cause the anterior (front) ligamentous stabilizers of the shoulder to also stretch out and allow the humerus to shift forward, thus increasing the severity of the internal impingement.





Contact points for internal impingement. As the shoulder rotates, the two points marked here come together in painful contact

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Frequent Signs and Symptoms

- Pain around the shoulder, most frequently during the late cocking phase of throwing or overhead hitting in volleyball
- Decrease in velocity and accuracy of throwing

Etiology (Causes)

- Overuse of the shoulder due to repetitive throwing or overhead activity
- Uncommonly, fall on arm extended overhead

Risk Factors

- Throwing/overhead sports, such as baseball, tennis, or volleyball
- Swimming
- Poor physical conditioning (strength and flexibility)
- Loose ligaments or joints ("double jointed")

Prevention

- Appropriately warm up and stretch before practice or competition
- Allow time for adequate rest and recovery between practices and competition
- Maintain appropriate conditioning:
  - Cardiovascular fitness
  - Shoulder flexibility
  - Muscle strength and endurance
- Use proper throwing technique and mechanics, avoiding overextension of the shoulder during throwing by keeping the upper arm in line with the shoulder blade during late cocking (wind-up)
- Limit overall volume of throwing

Outcomes

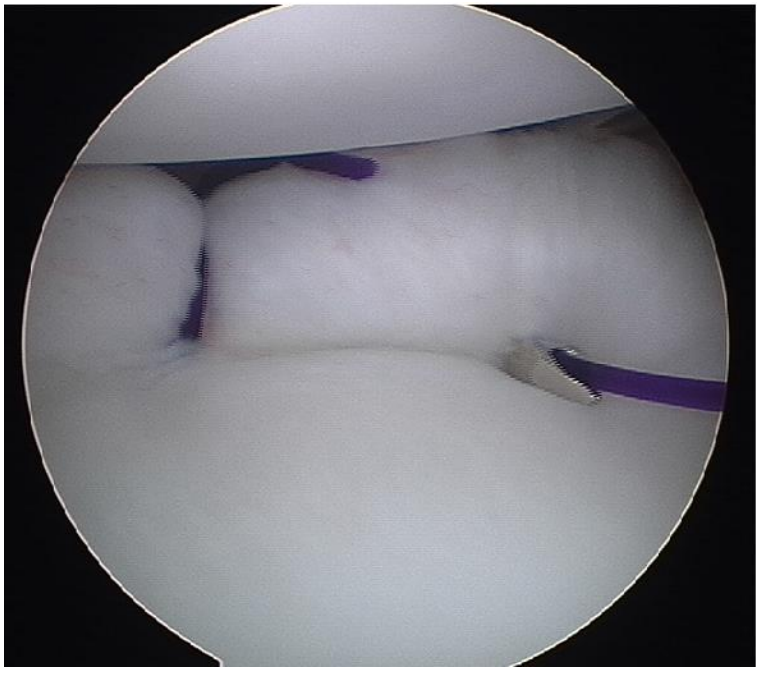
Painful internal impingement without tears of the labrum or rotator cuff may improve with conservative treatment consisting of avoidance of aggravating activities, rehabilitation exercises, correction of throwing mechanics and gradual return to overhead activities. Internal impingement with labral and/or rotator cuff tears often require arthroscopic surgery to repair tears and address loose ligaments in the front of the shoulder to alleviate symptoms.

Potential Complications

- Labral tear
- Rotator cuff tendon tear
- Recurrence of symptoms, especially if poor mechanics are not corrected
- Shoulder stiffness or loss of motion following surgery
- Difficulty returning to overhead throwing and/or hitting

Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises, and modification of the activity that initially caused the problem. Referral to a physical therapist or athletic trainer may be recommended. Treatment is geared toward the rotator cuff and shoulder blade muscles to help stabilize the shoulder as well as optimizing the shoulder range of motion to minimize the impingement in the back of the shoulder. An injection of cortisone to the area around the tendon (within the bursa) is rarely recommended. It is important to correct throwing mechanics and gradually return using an interval throwing program. If conservative treatment fails to improve symptoms, arthroscopic surgery may be indicated to repair or debride the torn labrum and rotator cuff tissues and sometimes, to tighten a stretched anteroinferior capsule and ligaments. Return to activity is usually possible four to six months after surgery, with additional time required for return to specific sports activity such as pitching.



Arthroscopic view of the passing and tying of absorbable (non-permanent) sutures to tighten the anteroinferior capsule.

Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers are usually not prescribed for this condition except following surgery.
- Cortisone injections reduce inflammation, and anesthetics temporarily relieve pain, but these are rarely recommended for this condition. Cortisone helps reduce the inflammation and treat the symptoms, but it does not treat the problem and may weaken muscle and tendon tissue.

Modalities (Cold Therapy)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 15 to 20 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.

Notify My Office If Symptoms Worsen