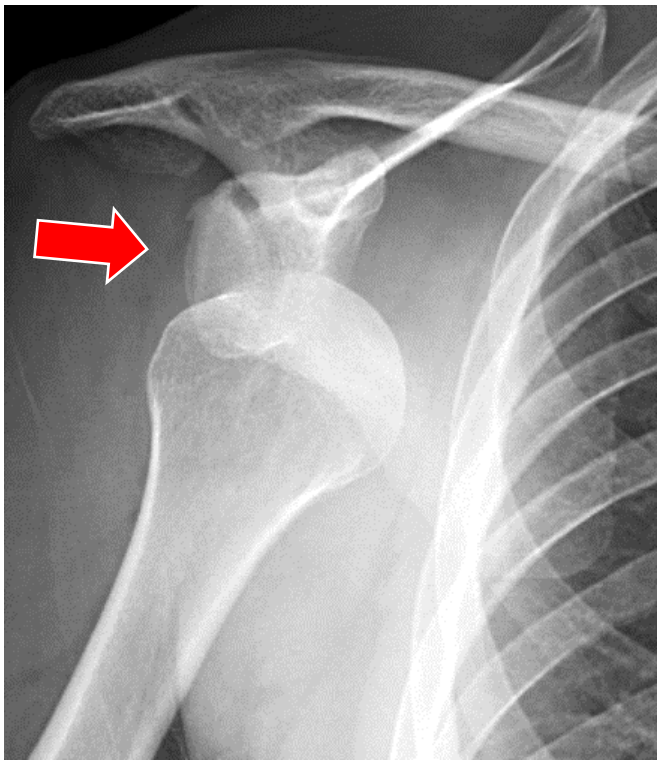
Anterior Shoulder Dislocations and Instability

Anterior shoulder instability typically results from a dislocation injury to the shoulder joint when the humeral head (ball) of the humerus (upper arm bone) is displaced from its normal position in the center of the glenoid (socket) and the joint surfaces no longer touch each other. The most common dislocation is anterior (more than 90 percent), where the humeral head is in front and below the glenoid.

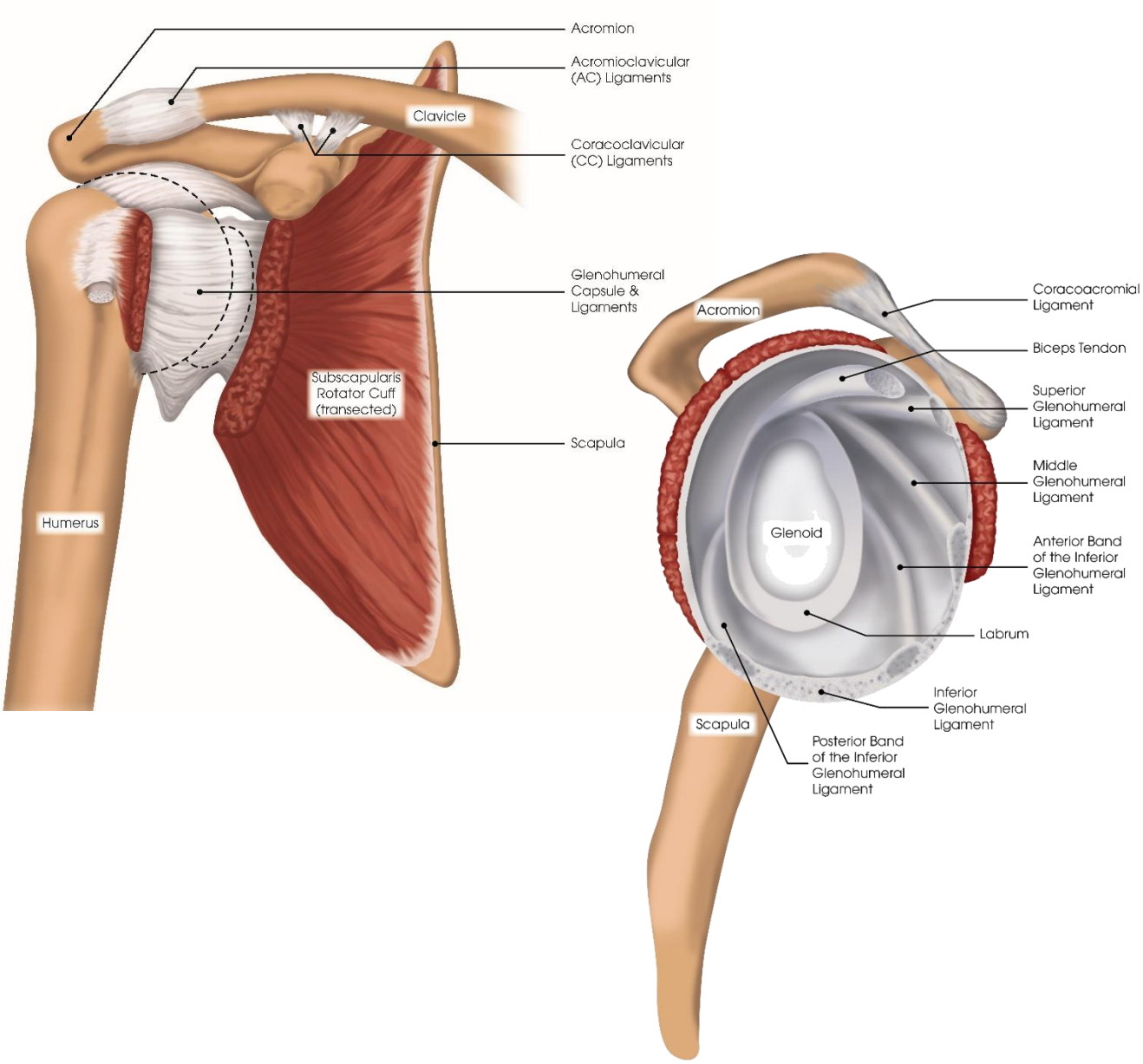


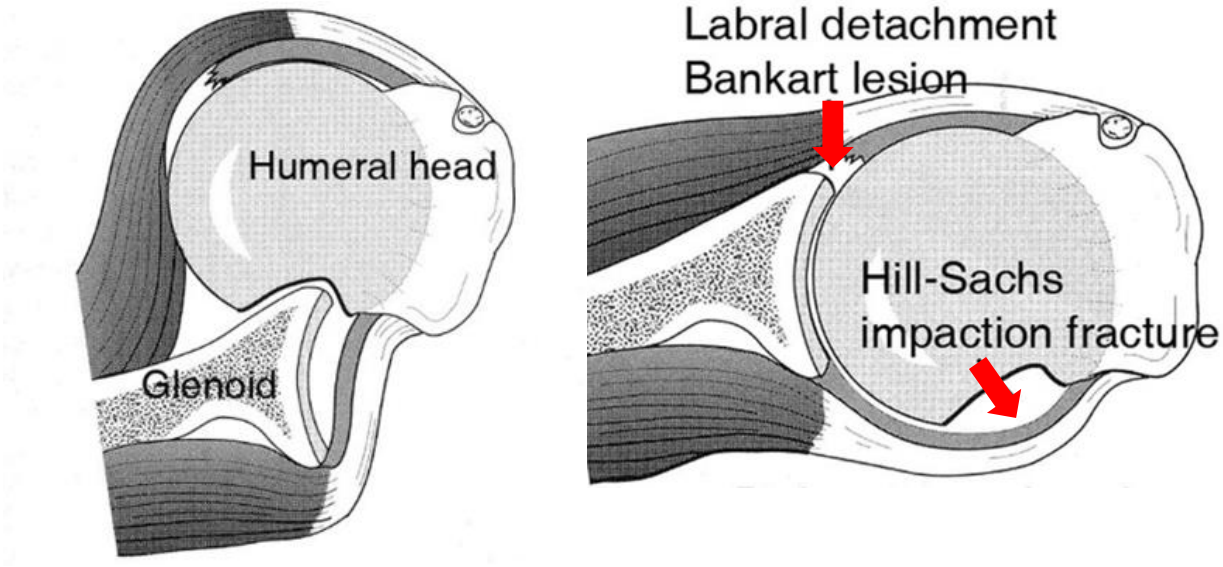
X-ray of an anterior shoulder dislocation.

Because the shoulder has more motion than any other large joint in the body, it is the most often dislocated large joint. The shoulder is like a golf ball on a golf tee. Many structures contribute to shoulder stability and include bony contours of the humeral head (ball) and glenoid (socket). The soft tissue bumper of the glenoid is called the labrum. The labrum surrounds the rim of the socket helping to keep the head of the humerus in place. Ligaments that attach from the glenoid to the humeral head also assist in keeping the head of the humerus in place. The muscles of the rotator cuff that surround the shoulder also help keep the shoulder in place. When a shoulder is dislocated from its glenoid (socket), these stabilizing

structures may be injured to different degrees, including the humeral and glenoid bone, the labrum, the capsule and ligaments, and the rotator cuff muscles. When a younger, active patient dislocates his or her shoulder, he or she may injure all these structures but usually tears the labrum off the glenoid (socket) along with the attached stabilizing capsule and ligaments, called a Bankart lesion.

Capsular and Ligamentous Anatomy of the Shoulder





Anterior dislocation | Dislocation reduced

1. Pictured on the left is an anterior dislocation where the humeral head is dislocated anteriorly (out the front). On the right, the dislocation has been reduced revealing a Bankart lesion (tear) and Hill-Sachs impaction fracture (dent).

In this younger more active population, surgery is often needed to repair the labrum with its ligaments and capsule; otherwise, the shoulder typically remains unstable, continues to dislocate, and may result in further injury to the stabilizing structures. Therefore, early surgery is typically recommended to repair the torn labrum and capsular ligaments and restore shoulder stability.

In patients over 40 years of age that sustain a shoulder dislocation, there is a lower risk for re-dislocation and conservative treatment is often an option. However, these older patients have a higher risk of tearing their rotator cuff with the dislocation which may also require surgery.

Overhead throwing and hitting athletes can stretch out the anterior capsule and ligaments of the shoulder by repetitively moving their arm to the overhead late cocking position associated with throwing and overhead hitting. This usually causes micro-instability of the shoulder, not dislocations. Micro-instability results in pain and limitations with overhead activities from the subtle anterior movement of the humeral head (ball) in the glenoid (socket) and resulting internal impingement (abnormal internal contact) between the humeral head and the glenoid

and the intervening rotator cuff and labral tissues. Longstanding internal impingement may result in symptomatic labral tears and rotator cuff tears

Frequent Signs and Symptoms

- Severe pain in the shoulder at the time of dislocation injury
- Loss of shoulder function and severe pain when attempting to move the shoulder
- Apprehension, feeling like your shoulder wants to slip out of place with overhead positions
- Tenderness, deformity (fullness in the armpit and prominent roof of the shoulder), and swelling
- Pain with moving the shoulder, especially when reaching overhead; pain with heavy lifting; pain that awakens you at night
- Loss of strength
- Numbness or paralysis in the upper arm and deltoid muscle from pinching, stretching, or pressure on nerves
- Crepitation ("crackling") feeling and sound when the injured area is touched or with shoulder motion

Etiology (Causes)

- Direct blow to the shoulder
- Tackling or falling on an outstretched arm resulting backward force on an extended arm
- Repetitive throwing motion or swimming
- Result of a shoulder dislocation injury
- Congenital abnormality (you are born with it), such as a shallow or malformed joint surface
- Violent muscle contractions associated with seizures

Risk Factors

- Contact sports (football, wrestling, and basketball)
- Sports that involve repetitive overhead activity, such as baseball, volleyball, swimming
- Sports that require forceful lifting, hitting, or twisting
- Previous shoulder dislocations or sprains
- Shoulder fracture
- Repeated shoulder injury
- Poor physical conditioning (strength and flexibility)

Prevention

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Cardiovascular fitness
  - Shoulder strength
  - Flexibility and endurance
- For participation in contact sports, tackle with good technique

Outcomes

Following reduction of a shoulder dislocation, early functional recovery is excellent, but re-dislocation rates are high even with proper treatment. For younger active patients, re-dislocation rates without surgical repair are extremely high. Therefore, young athletic patients often require arthroscopic repair of the injured stabilizing structures—torn labrum, capsule and ligaments. For patients older than age 40, re-dislocation rates are lower, but the rate of rotator cuff injury is higher. These patients can be treated successfully without surgery unless a rotator cuff tear exists, which in most cases requires operative repair.

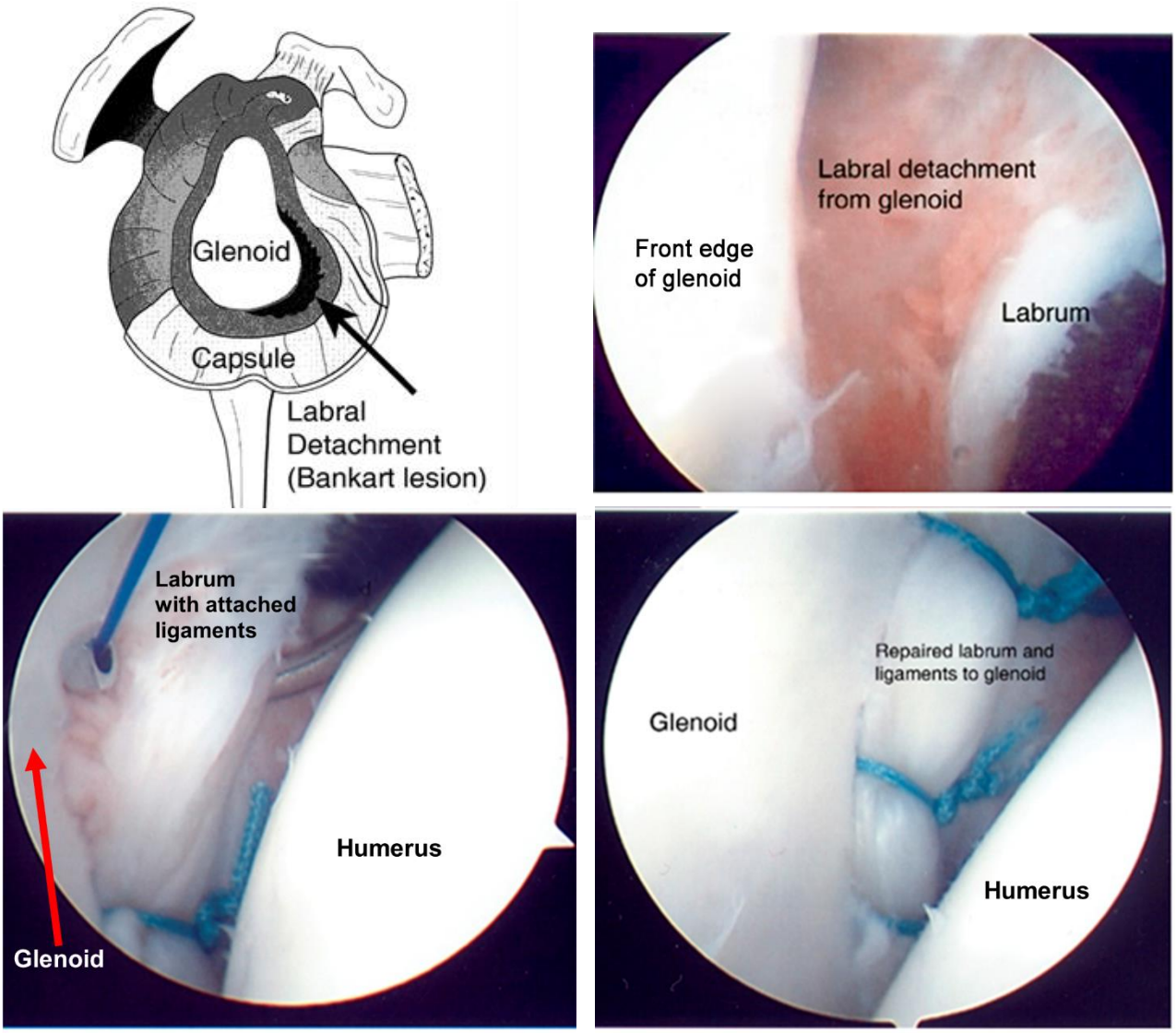
Potential Complications

- Damage to nearby nerves or major blood vessels, causing temporary or permanent weakness, paralysis, numbness, coldness, and paleness from dislocation
- Fracture or joint cartilage injury due to the dislocation or reduction of the dislocation
- Prolonged healing or recurrent dislocation if activity is resumed too soon
- Rotator cuff tear (usually if you are older than age 40 at time of first dislocation)
- Recurrent shoulder dislocations, particularly if the previous dislocation is not repaired and appropriately rehabilitated; are caused by repeat injury. However, each subsequent dislocation requires less force to cause a dislocation.
- Unstable or arthritic shoulder following repeat injuries

Treatment Considerations

- Shoulder dislocations should be reduced (put back in place) as soon as possible for the comfort of the patient and release potentially damaging traction of nerves and blood vessels. It may also help to restore blood flow to the humeral head bone which may be obstructed with the dislocation. Following the reduction, slings should be discontinued and early range of motion and gentle strengthening should begin to restore shoulder function. X-ray, MRI studies and sometimes CT scans are needed to determine the full extent of injury to the stabilizing structures of the shoulder joint.

Younger patients often require arthroscopic surgery to repair the torn labrum, capsule and ligamentous structures and even sometimes fractures of the bone and tears in the rotator cuff. Older patients often return to previous levels of function without surgery unless they sustain a fracture or tear of the rotator cuff that requires surgery.



The top pictures demonstrate a Bankart lesion or tear of the labrum and capsular ligament away from the glenoid (shoulder socket). The bottom pictures show arthroscopic surgical repair.

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Possible Medications

- General anesthesia or intravenous (IV) sedation may be used during the reduction of the dislocation
- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (DO NOT take within 10 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.
- Strong pain relievers may be prescribed as necessary. Use only as directed and only as much as you need.

Modalities (Cold Therapy)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 15-20 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.

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