

# Coracoid Impingement

## Some Information on the Rare Problem of Coracoid Impingement

Raising your arm up over your head can be a piece of cake. Smooth, easy flow of motion is effortless. But to accomplish this movement, there is an entire shoulder and upper quadrant complex at work. The scapula (shoulder blade), clavicle (collar bone), and glenohumeral (shoulder joint) must slide and glide with just the right timing.

Part of the shoulder complex includes the soft tissue structures surrounding and attaching to various points on these bones. Any change in the anatomy, shape of the bones, or position of these structures can alter movement. One problem involving the coracoid process is the focus of this article.

The coracoid process is a small hook-like structure at the top front part of the scapula (shoulder blade). The coracoid process works together with the acromion to stabilize the shoulder joint

The acromion is a curved piece of bone that comes from the back of the shoulder blade around and over the top of the shoulder joint. Muscles and tendons of the rotator cuff slip underneath the coracoid and the acromion to attach to the humerus (upper arm bone). Some ligaments stretch between the coracoid process and the acromion.

Pinching of the soft tissue structures by the coracoid process is referred to as coracoid impingement. The patient's first inkling that something is wrong is a dull, aching pain along the front of the shoulder. As the arm moves forward and up, across the chest, or internally rotates, the coracoid pinches against the subscapularis tendon, subcoracoid bursa, and/or the biceps tendon.

Coracoid impingement is an uncommon problem and rarely occurs alone without some other change in the nearby anatomic structures contributing to the problem. For example, rotator cuff tears or degeneration or an unusual shape or length of the coracoid bone can lead to coracoid impingement. Calcium build up in the subscapularis bone or the formation of a ganglion cyst can also cause impingement in this area.

Surgeons who are treating shoulder problems may find patients who still have shoulder pain after shoulder surgery to repair a torn rotator cuff or relieve pressure under the subacromion.

Coracoid impingement just doesn't occur by itself. There is usually another reason why this additional problem has developed. It is up to the surgeon to search carefully for factors such as rotator cuff damage or degeneration, shoulder joint instability, or arthritis.

The patient's history can offer helpful clues. There is often a previous history of fractures of the humerus, coracoid, or glenoid (shoulder socket). Prior shoulder surgery is another contributing factor.

The physician examines the shoulder and looks for tenderness over the coracoid process, pain when the arm is moved across the chest, and weakness of the subscapularis muscle. Other signs and symptoms may include shoulder instability, pain on testing the biceps tendon, and generalized weakness of the rotator cuff.

Experts don't agree on whether CT scans or dynamic MRIs (taken while the patient is moving the arm) are helpful. The shape, size, length, and movement of the coracoid and the arch that it forms vary from patient to patient. Knowing what is "normal" and "abnormal" can be difficult to tell.

The radiologist looks for cystic changes, edema, and tears in the soft tissues. Imaging studies do help identify decreased space between bones where impingement might occur. Usually coracoid impingement has more than one anatomic feature contributing to the problem.

An arthroscopic examination (using a special scope to look inside the joint) is the best way to find out what's causing the problem. Some cases can be cleared up surgically at the time of the arthroscopic exam. The surgeon may reshape or cut the tip of the coracoid process off. Tears in the rotator cuff may be repaired.

If there is a thickened bursa (pad of tissue to reduce friction between two surfaces), the surgeon can reduce the size or remove it entirely. Likewise, any thickened soft tissue or scar tissue causing narrowing of the space between the coracoid and the humerus can be removed.

The surgeon is careful not to cut into the supportive ligaments holding the shoulder complex together. Likewise, it is important to avoid cutting into nerves and blood vessels in the area. The effect of this type of surgery is to decompress the subcoracoid space.

Success is measured by pain relief and improvement of shoulder function. Joint motion isn't usually affected by coracoid impingement, so there may not be any change before and after surgery in terms of shoulder joint range-of-motion.

Two other things you should know about coracoid impingement. First, conservative (nonoperative) care is possible. In fact, this is the first-line of treatment before doing surgery.

A Physical Therapist will work with you to restore normal posture and shoulder stability. This may involve a strengthening program for the rotator cuff, and taping of the scapula and shoulder (called kinesiotaping).

Kinesiotaping is used to place the shoulder in the right position and re-teach the muscles to hold and move properly. The result is to take pressure off the subcoracoid soft tissues and prevent impingement.

Any areas of scar tissue or tightness may be treated with manual therapy and stretching exercises. The therapist will evaluate how you move and any compensatory patterns of movement you may have developed as a result of anatomic changes or soft tissue injuries or degeneration. Activity modification may be required at home during daily activities, at work, and during recreational or sports activities.

If conservative care is unable to change the movement pattern and painful symptoms, then surgery is considered. Sometimes the surgeon is unable to accomplish what needs to be done with arthroscopic surgery. In such cases, open incision surgery may be required. The procedure is called an open coracoid decompression.

In summary, the problem of coracoid impingement is rare and even more unusual as an isolated problem (i.e., by itself without some other shoulder pathology contributing to it).

There aren't very many studies reporting on the outcomes based on treatment. Conservative care is attempted followed by surgical repair and/or reconstruction if and when a nonoperative approach is unsuccessful in relieving pain. The author of this study provides a description, drawings, and intraarthroscopic photos of his preferred surgical techniques to handle this problem.

Reference: Michael Q. Freehill, MD. Coracoid Impingement: Diagnosis and Treatment. In Journal of the American Academy of Orthopaedic Surgeons. April 2011. Vol. 19. No. 4. Pp. 191-197.