

Rotator Cuff Disease

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Shoulder pain is a very common problem. Thousands of us each day have trouble doing some of the most routine tasks due to pain in the shoulder. One of the most common causes of shoulder pain is rotator cuff disease. Rotator cuff disease is damage to the rotator cuff from any cause. Hopefully this article will give you some insight to their anatomy, function, potential problems, and treatment options.

Many patients seek medical attention for shoulder pain, and a common diagnosis given is 'shoulder bursitis,' or 'shoulder tendonitis.' Shoulder bursitis and rotator cuff tendonitis are all ways of saying there is inflammation of a particular area within the shoulder joint that is causing a common set of symptoms. The treatment for both is the same. The best terminology for these symptoms is '**impingement syndrome.**' Impingement syndrome occurs when there is inflammation of the rotator cuff tendons and the bursa that surrounds these tendons. Sometimes, the rotator cuff can become torn; we call this a rotator cuff tear. Typically, the tendon(s) of the rotator cuff tear or pull off the bone. Unfortunately, a rotator cuff tear is not an uncommon problem, and these injuries make many routine activities difficult and painful.

Anatomy

The rotator cuff is the name for the tendons that surround the shoulder joint. In part due to the rotator cuff, the shoulder joint can move and turn through a wider range than any other joint in the body. Together, the rotator cuff muscles help guide the shoulder through many motions, and also lend stability to the joint. The ends of the rotator cuff muscles form tendons that attach to the arm bone (humerus). It is the tendinous portion of the rotator cuff that is usually involved in a rotator cuff tear.

The rotator cuff is actually a group of four muscles and their tendons that wrap around the front, back, and top of the shoulder joint. The four muscles whose tendons form the rotator cuff are: the subscapularis muscle, which moves the arm by turning it inward (internal rotation); the supraspinatus muscle, which is responsible for elevating the arm and moving it away from the body; the infraspinatus muscle, which assists the lifting of the arm during turning the arm outward (external rotation); and the teres minor muscle, which also helps in the outward turning of the arm.

The Problem

The rotator cuff can be injured because of degeneration with aging or inflammation due to tendonitis, bursitis, or arthritis of the shoulder. The rotator cuff is commonly injured by trauma (such as from falling and injuring the shoulder or overuse in sports). Rotator cuff injury is particularly common in persons who perform repetitive overhead motions that

can stress the rotator cuff. Impingement syndrome, or shoulder bursitis, occurs when there is inflammation between the top of the humerus (arm bone) and the acromion (tip of the shoulder). Between these bones lie the tendons of the rotator cuff, and the bursa that protects these tendons.

Normally, these tendons slide effortlessly within this space. Often there is an initial injury that sets off the process of inflammation. Thereafter, the problem can be self-exacerbating. In some people this space becomes too narrow for normal motion, and the tendons and bursa become inflamed. Inflammation leads to thickening of the tendons and bursa, and contributes to the loss of space in this location. Eventually, this space becomes too narrow to accommodate the tendons and the bursa, and every time these structures move between the bones they are pinched--this is the impingement

A rotator cuff tear is seen both in the young and old, but they are much more common in the older population. Usually in younger patients, there is either a traumatic injury, or the patient is demanding unusual use of their shoulder, as seen in professional athletes. As people age, the muscle and tendon tissue of the rotator cuff loses some elasticity, becomes more susceptible to injuries, and is often damaged while performing everyday activities. This is the reason that rotator cuff tears are more commonly seen in older patients.

Not every rotator cuff tear causes significant pain or disability. In fact, autopsy studies have shown rotator cuff tears in up to 70% of people over the age of 80 and 30% of the population under the age of 70. Clearly, all of the people with rotator cuff tears are not complaining of painful symptoms. However, in many individuals, a rotator cuff tear can cause significant disability, and prompt diagnosis and treatment can have a profound improvement in symptoms.

Symptoms

The most common symptoms of rotator cuff disease are:

- **Pain**
Often the pain is felt over the outside of the shoulder and upper arm. The pain is usually noted to be more intense at nighttime and sometimes increases when lying on the affected shoulder. It is often noticed gradually.
- **Decreased strength**
Strength of the rotator cuff tendons can be tested by an orthopaedic surgeon. By isolating the different tendons of the rotator cuff with special tests, your doctor can determine the extent of the tear. Significant tears may affect a patient's ability to raise up their arm over their head.
- **Difficulty with specific activities**
Patients often complain of difficulty performing activities such as moving the arm away from their body, combing their hair, snapping a bra behind their back, reaching behind their back, or sleeping on the affected shoulder. Anything done overhead (like a tennis serve) can exacerbate the pain.

Diagnosis

Rotator cuff disease is suggested by the patient's history of activities and symptoms of pain in the shoulder described above. During the physical exam, the doctor can observe increased pain with specific maneuvers of the shoulder and weakness when comparing strength with the opposite, or unaffected, shoulder.

X-rays of the shoulder will be obtained if there is a concern of a rotator cuff tear. The x-rays do not necessarily need to be done before initiating treatment, but if symptoms persist, x-rays will be obtained. Your doctor will look for signs of a rotator cuff tear, although the rotator cuff tear itself cannot be seen on a regular x-ray. Signs of a problem within the rotator cuff include a narrowing of the space for the rotator cuff and bone spurs around the rotator cuff tendons.

The test most commonly used to diagnose a rotator cuff tear is a MRI. The MRI is helpful because it can show both complete rotator cuff tears and partial rotator cuff tears. The MRI can also show evidence of shoulder bursitis and other common shoulder problems.

Treatment

The treatment of rotator cuff disease depends on the severity of the injury to the tendons of the rotator cuff and the underlying condition of the patient. Even with complete rotator cuff tears, the standard treatment is to start with conservative measures. That being said, rotator cuff tears do not heal well with time. They tend to either enlarge, or, at best, stabilize in size. In younger patients this can be a problem if it is not fixed in a timely matter. Chronically enlarging rotator cuff tears can lead to significant pain, loss of motion, weakness, and arthritis if not treated. The good news is that rotator cuff tears do not necessarily need to heal in order for the symptoms to resolve. Because many rotator cuff tears do not need surgery, the initial treatment is usually with non-operative means. While the size of the tear may not change with conservative treatment, the symptoms often diminish. Again, in some cases (such a traumatic rotator cuff tear in a younger patient) early surgery will be recommended.

The first steps of rotator cuff treatment include:

- **Physical Therapy**
Physical therapy is the most important step in the treatment of a rotator cuff injury. Strengthening the rotator cuff muscles is important to maintain normal shoulder function. A few meetings with a physical therapist can help teach you the specific exercises to help alleviate and prevent a recurrence of your shoulder pain.
- **Anti-Inflammatory Medications**
Medications are most helpful at controlling the symptoms of a rotator cuff tear. Simple anti-inflammatory medications can be taken regularly for a short period, and then be used when symptoms of a rotator cuff tear flare up.
- **Cortisone Injections**
Cortisone injections can be incredibly helpful at limiting the acute inflammatory

process and allowing the patient to begin therapy. It is important to participate in the therapy and exercises even if the shoulder feels better after an injection. The therapy part of treatment will help prevent a recurrence of symptoms. If the symptoms are significant, your doctor may opt to perform this cortisone injection on an initial visit. The cortisone injection places medication to treat the inflammation directly in the problem area. The most significant downside is that cortisone injections can weaken tendons, and repeated cortisone injections should be carefully considered.

Not all rotator cuff tears will need surgical treatment. Determining when a rotator cuff tear will require surgery must take into consideration multiple factors. Certain questions need to be answered, including: Have I tried every available non-operative treatment option available? How much is the pain affecting my everyday life? Am I unable to return to my previous sport because of my shoulder pain? How big is my tear and can we “watch it” and see what happens? Am I young enough where the tear can become a problem if not treated?

Having an in-depth conversation with your doctor outlining the potential risks and benefits of performing surgery is important. Each patient must be treated individually as not all rotator cuff tears are the same and different factors must be considered in each individual case.

Surgical treatment

Should the aforementioned treatments fail, surgical correction of your problem is a viable option. Patients who are considering surgery for bursitis/tendonitis should have attempted non-surgical treatments for at least 3 to 6 months without improvement in symptoms. The symptoms should be causing difficulty with the patient's activities, and/or interfering with sleep at night.

For simple shoulder impingement/tendonitis/bursitis, subacromial decompression is a good option. This is an arthroscopic procedure performed as an outpatient using instruments inserted through small (~1 cm) incisions. Through 2 or 3 tiny incisions, a small portion of the bone (acromion) and its bursa are removed that overlies the rotator cuff. This removal can relieve pressure on the rotator cuff and promote healing and recovery. Once the bursa is removed, the rotator cuff is inspected to look for any signs of a tear.

The most severe rotator cuff disease, complete full-thickness rotator cuff tears, usually requires surgical procedures for the best results. These procedures, which can also be done as an outpatient by either arthroscopy or open surgery, involve mending the torn rotator cuff by suturing the tissues back together. There are several surgical procedures that are possible for rotator cuff treatment. The three most common procedures are:

- **Open Repair**

Prior to the use of the arthroscope, all rotator cuffs were repaired by looking

directly at the torn tendon, through an incision about 6-10 centimeters in length. The advantage is the rotator cuff tendons are easily seen by this method, but the incision is large, and the recovery can be longer and more painful.

- **Mini-Open Repair**

The mini-open method of repairing a rotator cuff involves both the use of an arthroscope, and a short incision to get access to torn tendon. By using the arthroscope, the surgeon can also look into the shoulder joint to clean out any damaged tissue or bone spurs. The incision is about 3-4 cm, and the recovery is somewhat less involved than the open cuff repair.

- **Arthroscopic Repair**

An arthroscopic repair is done with small incisions, and the repair is done by the surgeon looking through a small camera to watch his or her repair on a television monitor. This is a more recent development in treatment of rotator cuff tears, and not all surgeons can treat tears by this method. The surgery to perform the rotator cuff repair generally lasts between one and two hours.

Recovery

Length of recovery will depend on several factors, including your level of strength before the operation and the severity of the rotator cuff disease/tear. For rehabilitation following a subacromial decompression, patients are placed in a shoulder sling following surgery but they can begin shoulder motion quickly. Strengthening can begin within a few weeks, and sports can resume after the swelling has subsided. However, after the rotator cuff is repaired, physical therapy begins more gradually and with caution. Initially, the therapy is gentle so as not to affect the rotator cuff repair. Thus, after four to six weeks, more active lifting with the arm begins. Approximately 8-10 weeks after the rotator cuff repair, physical therapy will become more intense in an effort to strengthen the rotator cuff muscles. Complete recovery usually requires at least four to six months.

Dr. Sforzo has two convenient locations in Sarasota and Lakewood Ranch. For more information about Dr. Sforzo or to make an appointment, please call 378-5100 or visit his website at www.orthocenterflorida.com.