



The Rotator Cuff

The rotator cuff of the shoulder is a group of four tendons which converge on the ball part of the shoulder or humeral head as it is termed. These tendons do not attach to the head itself, as this portion of the upper arm glides in the shoulder socket known as the glenoid.

The rotator cuff tendons attach around the edge of the ball very tightly and provide stability to the shoulder contributing to holding the ball in the shoulder socket. They provide stability and strength to the shoulder and have a very large role to play in how the shoulder works.

There is very little room that nature has provided for the rotator cuff to do its work. The tendons blend together as they come across the humeral head going to their attachments around the head. There is a bursa sac which sits on top of the rotator cuff tendons and under the bony shelf, which is called the acromion process which is actually part of the scapula or shoulder blade.

What we are trying to point out here is that the structures are very tightly packed together and as long as they are smooth and slippery, a person hardly thinks about the shoulder. When there is some catching or feeling of friction in the shoulder it may be a warning that things are beginning to change. This catching and friction feeling, however, is often not painful perhaps even for a long time.

Wear and Tear Changes

At some point in most of us, wear and tear changes will creep into the tissues of the shoulder, particularly those of the rotator cuff. There are a variety of reasons that this occurs, which become very technical and are not needed in an article of this type. Suffice it to say that these wear and tear changes in the rotator cuff and the subacromial bursa produce inflammation, some swelling in the tissues and even some separation or damage to the fibrous structure of the rotator cuff itself. Some fibers separate from each other causing a splitting of the tendon and sometimes the fibers actually pull away from the bone producing what is commonly called a torn rotator cuff. Because the rotator cuff is a very thick structure, the tear can be partial and does not need to totally separate, producing a hole in the rotator cuff. Many symptoms in the shoulder can set in at this point. Certainly pain is a chief finding and may actually be the only symptom at this point. A feeling of friction which we previously mentioned is very common, because when the tissues are swollen and also perhaps partially torn, this sets up a type of impingement or catching in the shoulder which results because of the limited space available to the tissues in the shoulder.

Sometimes the inflammation will progress and begin to produce tightness or stiffness in the tissues which is worsened by the person protecting the shoulder and avoiding use of it which causes even more stiffness to occur. This leads to a condition which is commonly referred to as frozen shoulder, or as it is termed medically - adhesive capsulitis. This makes the problem even more complicated because not only does the person have damage and perhaps a full tear of the rotator cuff, but a very stiff shoulder, as well. A torn rotator cuff - either partial or full thickness - does not always produce a frozen shoulder.

Impingement Syndrome

A condition in the shoulder which is very frequent and not as serious as a torn rotator cuff is often referred to medically as impingement syndrome. This produces pain and discomfort in the anterior aspect or front of the shoulder. Many persons who ultimately will have a torn rotator cuff begin with the more simple problem of impingement syndrome where the tissues in the front part of the shoulder seem to jam together and begin to cause some swelling, pain and friction in a localized area in the front of the shoulder. This condition is not actually a torn rotator cuff and does not have to invariably lead to a torn rotator cuff. The description of impingement syndrome



will be covered in another article.

Rotator Cuff Treatment

Fortunately, all torn rotator cuff tendons are not terribly painful. They certainly do usually cause some symptoms and almost always cause weakness. Even tendons that are torn all the way through, or so-called full thickness tears, do not need to be treated unless they are producing significant symptoms. Tears of the rotator cuff, whether full thickness or partial thickness, have a very poor outlook of healing themselves.

If the person is not having much pain, and does not have stiffness in the shoulder, they might choose to get a long with the condition and not enter into any significant treatment.

In some persons who have a torn rotator cuff and significant stiffness, physical therapy can be helpful in relieving the stiffness and inflammation. It does not cure the torn rotator cuff, but might get the person comfortable enough that they would choose to leave things as they are. I have had many patients over the years who have chosen not to have surgical treatment of their torn rotator cuff.

However, there is a very large number of patients who have major pain and weakness in the shoulder with a damaged rotator cuff.

Diagnosis of Torn Rotator Cuff

The diagnosis of a torn rotator cuff, besides the office diagnosis from physical examination and history and plain x-rays is usually done in one of two ways. Arthrogram study of the shoulder has been available for many years and can be done either in the office or the hospital. It requires anesthetizing the skin of the front of the shoulder and placing a small amount of contrast fluid into the shoulder joint itself. This is followed by a short period of exercise and then x-rays to see where the contrast material has gone. A torn rotator cuff gives a typical contrast pattern.

MRI study of the damaged shoulder is a newer technique but also very helpful in the diagnosis of rotator cuff problems. It does not involve injection of contrast material into the shoulder, but many patients object to the close quarters in the MRI tube.

Treatment

Physical therapy is often used for shoulder problems such as a torn rotator cuff. It can be particularly helpful if inflammation in the shoulder is significant and loss of motion is present. As previously mentioned, some of the shoulders will improve sufficiently so the person can get along with the torn rotator cuff, if inflammation can be controlled and the patient can keep the shoulder moving.

In those that have significant pain and weakness in the shoulder and do not choose to try to get along with their symptoms, surgery is frequently suggested. There are a variety of ways to repair torn rotator cuffs and these are much too complicated to cover in an article of this type. Suffice it to say that a few lucky individuals will be able to have their damaged rotator cuff treated arthroscopically.

For most patients however, with damage to the rotator cuff - particularly full thickness tears - open repair of the tissues by suturing them is required. This is also accompanied by doing certain things to the shoulder to give more room to the repaired tissues, thereby reducing inflammation and friction.

Surgery, while not for everyone, is usually sufficiently successful that the person is better than what they would have been had they simply left it alone. Few patients will actually get 100%



Online Orthopaedics

Medical Article



improvement because it must be remembered that we are dealing with damaged structures and repairing the tissue, which is not normal to begin with.

If surgery is done, there is always an extended period of therapy to rehabilitate the shoulder and the upper extremity in general. Perhaps half of our patients need to actually go to physical therapy for treatment after surgery and the other half are able to do the exercises very adequately on their own at home.

For those patients who have experienced rotator cuff disorders, the process of treatment has usually taken several months to get better, whether surgery has been used or not.

It is one of the more difficult problems for us as surgeons to treat but the results for the patient, whether surgery is required or not, can be gratifying.

The only way to determine what is actually going on in a painful and sometimes stiff or weak shoulder is to have it adequately examined and x-rayed. Arthrogram or MRI study of the shoulder is sometimes required. Only after adequate evaluation can effective treatment be started.



Online Orthopaedics

Thank you for using the Online Orthopaedics Library.

We hope it was useful to you. Please check back frequently because new topics and information are being added continuously by Dr. Haverbush.

Please feel free to print, download, and use/distribute this information (as long as you are not reselling it in any form). Remember, it is the property of Online Orthopaedics and we retain all rights regarding its content. Alteration of this document in any way is a violation of the copyright.

This material does not constitute medical advice. It is intended for informational purposes only. No one associated with Online Orthopaedics will answer medical questions via email.

Please consult Dr. Haverbush or a physician for specific treatment recommendations.

Thomas J. Haverbush, MD. P.C.

**Office Address:
315 E. Warwick Dr., Suite A
Alma, Michigan 48801
989-463-6092
Fax 989-463-8914**

**Website Address:
www.orthopodsurgeon.com**