



Peter J. Millett, MD/Steadman-Hawkins Clinic

ONE OF THE MOST COMPLICATED JOINTS IN YOUR BODY

Prevention and Treatment for Common Rotator Cuff Injuries

The shoulder is one of the most complicated and heavily worked joints in the body. It also has the greatest range of motion of any joint! As such, it is no surprise that it is also highly vulnerable to injury. The shoulder's rotator cuff is an important series of four muscle groups and their tendons that connect the shoulder blade to the upper arm bone, or humerus. When the "cuff" is injured, it can become difficult, and even impossible, for a person to lift, throw, stretch or do any of the other chores assigned to the shoulder—even getting dressed can be incredibly difficult.

COMMON ROTATOR CUFF PROBLEMS

Rotator cuff injuries are fairly common and quite painful—it is estimated that 4.4 million physician visits in 2003 were for rotator cuff problems. They can be caused by a traumatic accident such as a fall, or the repetitive-use stress that activities such as golf, tennis and other sports put on the shoulder. Job-related tasks that require reaching overhead, such as house painting, electrical work and carpentry, are other culprits. Age, too, can take a toll, as a friend of mine who just turned 50 recently discovered. She had suffered mild shoulder pain for several years. It then became intolerable, especially at night when she was trying to sleep. An MRI showed that one of the tendons in her rotator cuff was almost completely torn, the victim not of too many tennis serves, but simply of life's wear and tear.

I called leading orthopaedic surgeon Peter J. Millett, MD, of the Steadman-Hawkins Clinic in Vail, Colorado, and formerly the co-director of Harvard Shoulder Service/Sports Medicine in Boston, for an update on rotator cuff injuries and treatment.

IDENTIFYING THE PAIN

Dr. Millett says that the most common rotator cuff injuries are to the tendons, both because of the stress they endure with activities that involve moving the arm, and because of the spontaneous degeneration (loss of structural properties) that occurs with aging. Injuries to the rotator cuff range from inflammation and swelling of the tendon, to partial tearing, to "full-thickness" (complete) tears. The tendons can be injured in a variety of ways but one of the most common is when they become compressed between the humerus and the top part of the shoulder blade as the arm is raised overhead.

Pain at night is very common and is caused by inflammation in the area, particularly the bursa (bursitis), and by muscle spasm from the torn tendons. The lack of distracting stimuli that are present during daytime probably also intensifies the pain at night. Another common complaint with rotator cuff injury is chronic pain that radiates down the side of the upper arm. Dr. Millett explains that this is actually called "referred pain" and comes from the nerves in the shoulder that course around the region of the tear.

DIAGNOSIS & TREATMENT

Trained orthopaedists can often diagnose rotator cuff problems through physical examination and by observing the patient's mobility limitations. An MRI, which Dr. Millett says is the most accurate technology for imaging tendons, may be ordered to visualize the extent of the problem. When tears are only partial, first-line treatment may be anti-inflammatory medication (either over the counter such as Aleve or Advil or a prescription) along with physical therapy. Sometimes cortisone shots are used to decrease inflammation in the shoulder—but they are not a long-term fix. Unfortunately, there is little evidence that rotator cuff tears will heal spontaneously (without surgical intervention), and they certainly can progress in size over time which leads to more functional limitations and disability. In severe cases, individuals may have severe pain and may not be able to raise their arms at all. In those whose symptoms persist, surgery is often advocated. With all such injuries, it is important to resist the temptation to return to previous activities before the recommended time, since the shoulder is particularly vulnerable to re-injury.

SURGICAL OPTIONS

While surgery for the rotator cuff is very inconvenient, due to the lengthy recuperation process, in many cases, it is the most predictable way to alleviate pain and restore function to the shoulder. "Rotator cuff tears do not heal spontaneously and thus require surgery to heal and to truly resolve the problem," says Dr. Millett. Rotator cuff tears have been repaired surgically for years, but the procedure used to require a large incision that was quite painful and necessitated a prolonged recovery. Now thanks to new

Peter J. Millett, MD, director of shoulder surgery and partner, the Steadman-Hawkins Clinic, Vail, Colorado.

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technology, the surgery can be performed with less invasive methods.

Nationwide, many surgeries today are performed arthroscopically, with only small incisions for a tiny camera and surgical instruments. This technology has been applied to rotator cuff surgery as well. Over the last several years, Dr. Millett and others have developed innovative new surgical instruments and treatments for patients who have significant rotator cuff tears that are less painful and allow for a faster recovery. Dr. Millett performs essentially all of his surgeries this way, believing that arthroscopic repair is not only easier on the patient than traditional open surgery, but since less cutting is involved, there is also less damage to the overlying muscles with less scarring and less pain.

Factors that can influence healing include the size of the tear, the number of tendons that are torn, smoking and patient age. Each of these must be considered when treating individuals with rotator cuff tears.

THE SURGERY PROCESS

Historically the best treatment for partial tears in the tendon or tendons

with severe inflammation has been less clearly defined. Dr. Millett has developed a new innovative surgical treatment for these problems that is called a “marrow stimulation” or “healing response” technique, based on the fact that bone marrow contains both stem cells and growth factors—getting those to the rotator cuff tendons helps them heal. Dr. Millett says this procedure can be performed entirely arthroscopically and as an outpatient procedure. To bring this about, Dr. Millett makes small perforations in the bone adjacent to the injured tendon, and then perforates the tendon as well. This allows the marrow, with its healing properties, to seep from the bone and stimulate repair of the tendon. Essentially, this method triggers the body’s physiological healing capabilities.

Research led by Dr. Millett has shown that patients experience less pain, heal faster and are able to start physical therapy sooner.

RECOVERY

Physical therapy following surgery is essential to restore full mobility and to

protect the surgical repair. It’s a commitment—three or four months of PT can be required to rehabilitate tendons. It’s worth it, though, since it means the likelihood of complete recovery, whether from open or arthroscopic surgery, is excellent, says Dr. Millett.

To prevent rotator cuff problems, initially or to decrease the risk of a recurrent tear, Dr. Millett advises building strength through regular exercises designed for that purpose. Consult a physical therapist or trainer who is knowledgeable about the complexity of the shoulder, in order to learn specific exercises. Make sure to warm up properly and stretch before activities calling upon the shoulder joint, and don’t over-do it. Avoid exercises that place the arm at extreme positions and abduction exercises with weights that require the arm to be fully extended, as these really stress the vulnerable rotator cuff tendons. Be especially careful early in the season when it comes to activities like golf or tennis. Have fun, enjoy your sport, but always use judgment and watch out for the “weekend warrior” syndrome. ■ ■