

Shoulder pain?

A rotator cuff injury could be to blame

Shoulder's versatility makes it the least stable, and one of the most commonly injured joints in the body

By Todd Battaglia

The shoulder is unique in both structure and function. Of all the joints in the body, the shoulder allows the greatest motion in the greatest number of directions. However, this mobility comes with a price — the shoulder's versatility makes it the least stable, and one of the most commonly injured joints in the body. In fact, the National Center for Health Statistics reports that each year, more than 13 million Americans seek treatment for shoulder problems.

Generally, most shoulder problems tend to involve soft tissues — tendons, muscles, and ligaments — rather than bones. One of the most common is injury to the rotator cuff. The rotator cuff is a group of four muscles and their associated tendons that surround the shoulder. Each starts at the shoulder blade (scapula), wraps across the shoulder, and attaches to the upper arm bone (humerus). The muscles of the rotator cuff are some of the primary movers and stabilizers of the shoulder joint, and are responsible for moving the shoulder forward, out to the side, and for both inward and outward rotation.

There are two distinct types of rotator cuff injury. One results from an acute or traumatic injury, such as a fall or a sports injury. The other comes from repetitive overuse of the shoulder, or degeneration of the shoulder over time. Typically, older persons suffer the more chronic types of injury whereas younger patients tend to be those who have suffered a specific, acute injury and have had no previous shoulder problems. There is a range of severity, especially among the more chronic injuries, which often begin with tendinitis (tendon inflammation), and may progress to actual tearing of the cuff tendons. There is also a broad continuum and large overlap between the two groups. Very commonly, persons will present with a history of low-level aching or pain in the shoulder, which has suddenly worsened after a minor injury or lifting activity.

Pain is the most common symptom of a rotator cuff injury, and depending on a patient's individual pain tolerance, she or he may seek medical attention at various stages of injury. It may be difficult for patients to pinpoint the pain to a specific area, but most commonly, pain is at the side of the shoulder, and often radiates down the upper arm toward the elbow. Patients may also describe a generalized discomfort made worse by specific movements of the shoulder. Night pain is also a common complaint. Pain around the shoulder blade or neck, or numbness and tingling radiating to the hand or

fingers, are not typical of a rotator cuff injury.

Depending on the severity, a rotator cuff tear may also result in decreased strength. This is often marked by the patient's inability to lift her or his arm fully above the head. Because of this decreased mobility, patients with a torn rotator cuff often complain about frustration and difficulty with performing daily activities. Tasks like hair brushing, reaching overhead cabinets and shelves, and lifting heavy objects may be a challenge.

Because shoulder pain is common, many people will initially attempt to treat themselves at home with rest, anti-inflammatories, and over-the-counter pain medications. Initially, one should also avoid activities that exacerbate the pain, typically lifting and overhead tasks. These at-home remedies may provide relief for mild, temporary shoulder pain caused by overexertion.

If shoulder pain becomes chronic, i.e. lasting several weeks, or is associated with a loss of strength or loss of motion, medical evaluation should be sought. This is especially important for people who experience sudden, severe shoulder pain from an acute injury. Prompt evaluation may help the patient avoid further injury, which could require more difficult and protracted treatments.

Diagnosis of a rotator cuff injury depends on the patient's medical history and physical examination. Often, an orthopedist can determine the type and extent of injury by learning when and how a patient's shoulder pain began. The physician will also ask about shoulder positions and activities that lessen or worsen the pain. Also important for diagnosis are X-rays and magnetic resonance imaging (MRI). X-rays show the bony structures of the shoulder and allow the physician to see bone spurs or calcium deposits that might be affecting the rotator cuff. MRI shows soft tissues, such as tendons and muscles, and allows direct visualization of inflammation and tears within the rotator cuff.

Treatment depends on the extent of injury and the types of activities in

which a patient needs, or wants, to participate. For patients suffering tendinitis, steroid injection may provide pain relief and decrease inflammation. This often allows the patient to undergo a physical therapy program designed to strengthen the shoulder so that the rotator cuff is no longer irritated.

If a patient has a torn cuff, treatment often depends on the size of the tear. Research shows that if a patient has a large or "full-thickness" tear, early surgical repair may offer an advantage in terms of preventing further injury. (A "full-thickness" tear is one that extends through the entire thickness of one of the tendons so that a portion of the tendon is completely detached.) For small or partial tears, though, most orthopedic surgeons will initially recommend a conservative or non-surgical approach, again including physical therapy and/or injection. If these measures do not result in satisfactory or long-term improvement, surgery may be recommended.

A variety of techniques may be used if surgery becomes necessary. These range from traditional, larger incision "open repair" to more modern, minimally invasive arthroscopic surgery. The technique used depends on the patient's needs and the surgeon's preference and expertise. In all instances, the goal is to eliminate pain and restore function by reattaching the tendon back to the bone from which it was torn. As a general rule, however, most shoulder specialists today can treat the great majority of rotator cuff injuries with arthroscopic methods, utilizing cameras and very small incisions, with open surgery with larger incisions typically reserved for extremely large or complex tears. Numerous studies have shown that, for appropriately chosen

patients, arthroscopic techniques are as, if not more, successful than open techniques. Furthermore, arthroscopy allows the surgeon to simultaneously address any other shoulder problems that may commonly co-exist, including cartilage or biceps tendon damage.

After rotator cuff surgery, the first stage of recovery focuses on protecting the arm to let the repaired tendon heal. Patients will typically wear a special sling to immobilize the shoulder for four to six weeks, and therapy during this period includes exercises for the fingers, wrist, and elbow to prevent stiffness. Any movement of the shoulder is strictly passive — that is, performed by the therapist or by the patient using her or his other arm, never by using the muscles of the repaired shoulder. Once the tendon has had adequate time to heal (typically six to 12 weeks), therapy shifts to focus on progressive strengthening of the shoulder. By three to six months after surgery, most patients are regaining functional strength and mobility in the shoulder and can begin to resume pre-injury activities, including occupational and athletic duties.



Todd Battaglia, M.D., M.S., is an orthopedic surgeon specializing in sports medicine and arthroscopic surgery of the shoulder and knee. He is in practice with Syracuse Orthopedic Specialists, PC. For further information on shoulder injuries, he may be reached at 251-3100 or at orthodoc.aaos.org/ToddBattaglia.