

What Can Be Done About Adhesive Capsulitis?

Many adults (mostly women) between the ages of 40 and 60 years of age develop a strange case of shoulder pain and stiffness called adhesive capsulitis. You may be more familiar with the term frozen shoulder to describe this condition. But as we find out in this review article on the problem, frozen shoulder and adhesive capsulitis are actually two separate conditions.

What separates these two diagnoses? Both show up looking like a painful, stiff shoulder. But adhesive capsulitis (as its name implies) affects the fibrous ligaments that surround the shoulder and form what's called the capsule. The condition referred to as a frozen shoulder usually doesn't involve the capsule.

The terms frozen shoulder and adhesive capsulitis are often used interchangeably. In other words, the two terms describe the same painful, stiff condition of the shoulder no matter what causes it. A more accurate way to look at this is to refer to true adhesive capsulitis (affecting the joint capsule) as a primary adhesive capsulitis.

Secondary adhesive capsulitis (or true frozen shoulder) might have some joint capsule changes but the shoulder stiffness is really coming from something outside the joint. Some of the conditions associated with secondary adhesive capsulitis include rotator cuff tears, biceps tendinitis, and arthritis.

How does the orthopedic surgeon diagnose one from the other? An accurate diagnosis is made when an arthroscopic exam is done. Tissue samples taken from inside and around the joint are examined under a microscope. Four separate stages of primary adhesive capsulitis have been recognized from tissue sampling.

In the first stage, pain prevents full active shoulder motion (patient moves his or her own shoulder) but full passive motion (examiner moves shoulder without help from the patient) is still available.

There are some inflammatory changes in the synovium but the capsular tissue is still normal.

In stage two (the freezing stage), pain is now accompanied by stiffness and the patient starts to lose full passive shoulder motion. External rotation is affected first. The rotator cuff remains strong. These two symptoms differ from secondary adhesive capsulitis (what might otherwise be called a frozen shoulder). The condition referred to as a frozen shoulder is more often characterized by damage to the rotator cuff and loss of internal rotation first. The pain during stage two is worse at night. Cellular changes continue to progress with increased blood flow to the synovium. There are early signs of scarring of the capsule from the inflammatory and repair processes.

By stage three of primary adhesive capsulitis (the frozen stage), there is less pain (mostly at the end range of motion) but more stiffness. There is a true loss of active and passive shoulder joint motion. Very little if any inflammation is seen in the tissue samples viewed under a microscope. Instead, the pathologist sees much more fibrotic, scar tissue.

In the final (chronic) stage (stage four) the patient doesn't have pain but profound stiffness and significant loss of motion that is gradually starting to get better. The body is no longer attempting to repair or correct the problem. Enough scar tissue is present to make it difficult for the surgeon to see the joint during arthroscopic examination.

Treatment is based on any underlying causes (if known), any risk factors present, and the stage at the time of diagnosis. Some of the risk factors for adhesive capsulitis include diabetes, thyroid dysfunction, and autoimmune diseases. Anyone who has had a heart attack, stroke, or been treated for breast cancer is also at increased risk for this condition. But a significant number of people develop adhesive capsulitis without any

known trauma, medical history, or other risk factor.

There isn't a one-best-treatment known for adhesive capsulitis. The authors point out that studies done so far just haven't been able to come to a single evidence-based set of treatment guidelines for this problem. So, they offer their "preferred" method with the caution that although this set of steps seems to work for them, no studies have been done to prove the validity of their approach.

Having said that, they recommend using a cortisone injection into the joint only during stage one. The steroid helps stop the inflammatory process that often gets out of hand if left untreated. They don't recommend the use of oral (pills taken by mouth) steroids but oral nonsteroidal antiinflammatories (NSAIDs) are given throughout all stages.

Physical Therapy is the mainstay of nonoperative treatment during all stages. The therapist decides what approach to take based on the stage of disease. Early on, the goal is to reduce pain and interrupt the inflammatory cycle. This can be done with modalities such as electrical stimulation, joint mobilization, the use of cold, and iontophoresis. Iontophoresis is a way to push medications through the skin directly into the inflamed tissue.

During stage two, the therapist will address the capsular tightness and adhesions. Joint mobilization techniques are used to keep the joint sliding and gliding smoothly and to prevent scar tissue from forming. Keeping full shoulder and scapular (shoulder blade) motion is a priority. Special stretching techniques are used to prevent pain that could cause muscles around the shoulder to tighten even more.

Physical Therapy throughout stages three and four continues in a similar fashion with added strengthening exercises. If conservative care fails to relieve pain and stiffness, then arthroscopic surgery is considered as the next step. The surgeon cuts the capsule, releases adhesions, and manipulates the shoulder (moves the arm through its full motion) under anesthesia. Physical Therapy resumes immediately (the next day) after surgery.

No one knows really what happens with adhesive capsulitis that goes untreated. This is referred to as the natural history. Most patients eventually make their way to the physician's office or a Physical Therapy clinic and receive some kind of medical treatment or hands-on therapy. There are enough cases of people who just get better on their own over time to suggest treatment may not be needed or make any real difference. Such cases are said to be self-limiting.

The few studies that have been done to follow patients treated at home without therapy by using moist heat and oral anti-inflammatory medications report normal function. They were asked to fill out questionnaires several years later with information on current pain and function. Some of those patients still had mild pain. In one study, "normal function" was according to the patient -- no formal strength testing was done. In other studies, this type of self-assessment wasn't accurate. Tests of shoulder motion and strength showed unreported (unrecognized?) limitations in strength and motion.

In summary, the authors present a clear description of true adhesive capsulitis. They provide a detailed description of their preferred treatment based on four stages of disease identified arthroscopically. A review of the studies available has not provided a best-practice way to treat this condition. Future studies are needed to compare different treatment techniques against one another and in comparison with no treatment.

Reference: Andrew S. Neviaser, MD, and Jo A. Hannafin, MD, PhD. Adhesive Capsulitis. A Review of Current Treatment. In The American Journal of Sports Medicine. November 2010. Vol. 38. No. 11. Pp. 2346-2356.