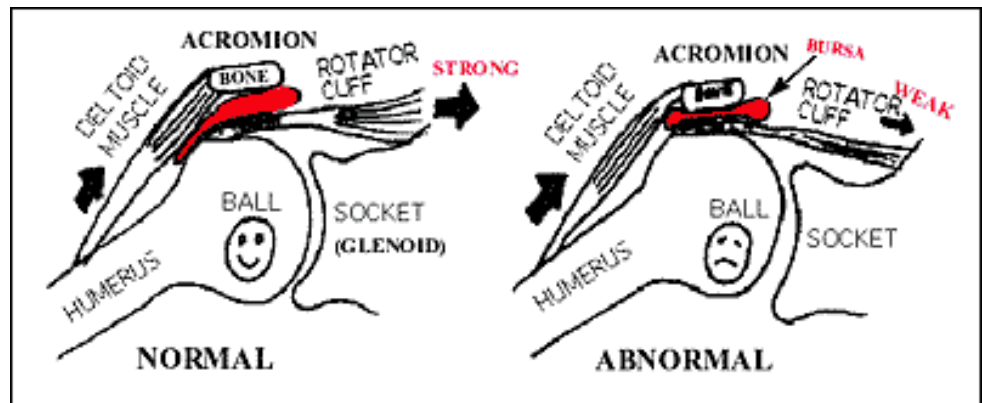


The Painful Shoulder By Philip R. Hardy, M.D.

The shoulder is a complex joint which not only has the greatest amount of motion of any joint in the body, but which in reality is made up of four separate gliding surfaces. The ball and socket part is made up of the round end of the upper arm



bone, called the humerus, and the socket part, which is a part of the shoulder blade, called the glenoid. The incredible amount of motion is due to the relatively large ball, approximately the size of an egg, articulating with the small socket, approximately the size of a teaspoon. This arrangement provides little stability, however, and so this amount of motion comes at the cost of the shoulder being that joint of the body most likely to dislocate. The shoulder will often become painful without an actual injury, or dislocation, however, and it is the development of pain in the shoulder, without an identifiable injury, which is the topic of this article.

This design of the shoulder which allows the arm to be used overhead, requires a lubrication sac, called the bursa, to be interposed between the muscles and tendons of the shoulder, called the rotator cuff, and the overlying bone, called the acromion. – See diagram.

If someone performs a lot of overhead activity that they are not accustomed to, such as chopping a lot of wood with an ax, the bursa becomes inflamed, and the condition is known as 'bursitis'. This will usually get better by itself over time, as long as no actual structural damage has occurred to the rotator cuff tendons themselves. If this process continues, eventually the rotator cuff tendons become inflamed as well, and this condition is called 'rotator cuff tendonitis'.

As the years go by, the rotator cuff wears against the underside of the acromion causing the cuff to get roughened, and thinner. Eventually, a 'partial thickness tear' develops. This is similar to when a piece of material becomes threadbare, but without an actual hole appearing in it. If this process continues, eventually a hole will appear in it, and this is then called a 'complete rotator cuff tear'. In reality, this means that some of the important muscles of the rotator cuff have become detached from the end of the humerus and so can no longer serve to control the motion of the ball in the socket, nor to add their power to the movement of the shoulder.

The ability of the shoulder to recover function in this situation depends on the extent to which it is possible to strengthen those rotator cuff muscles which remain attached. This involves very specific exercises which must selectively strengthen the rotator cuff without allowing them to become more inflamed. Additionally, these exercises must strengthen the muscles of the rotator cuff without strengthening the other muscles around the shoulder. This is because, as in the illustration above, if the other muscles, such as the deltoid, overpower the rotator cuff, they cause the rotator cuff to be banged into the acromion, causing further damage.

This process of causing injury to the rotator cuff, by banging it into the acromion is called 'impingement syndrome' or simply 'impingement'. This produces pain, further inflames the bursa and the tendons of the cuff and is therefore another cause of 'bursitis' and of 'rotator cuff tendonitis'. This commonly not only bothers patients attempting to do such normal activities as putting on a shirt or jacket, but also is more often bothersome at night when they lie down. As the process of the roughened rotator cuff rubbing against the acromion continues, spurs form on the underside of the acromion, further aggravating the problem. Treatment of this condition includes the use of anti-inflammatory medications, exercise and physical therapy. If this is unsuccessful, the use of a cortisone shot into the bursa sac may sometimes permanently improve this condition. This is because the inflammation of the bursa and the tendons is decreased by the use of the cortisone, which shrinks the inflamed tissues, allowing the cuff muscles to function better, and literally pull themselves out of trouble. If none of the above measures work, then arthroscopic surgery is the next option.

Arthroscopic surgery is typically performed on an outpatient basis, meaning the patient gets to go home the same day as the surgery. Its advantages are that the extent of the damage to the tissues can be accurately assessed by means of nothing more than puncture wounds, 1/4 to 1/2 inch in size. As techniques and instrumentation have improved, it is now often possible to correct all of the problems found at the time of the surgery through these same puncture sites, including removing the spurs from the bone, and stitching the rotator cuff back where it came from. This makes the surgical repair of the painful shoulder a much more reasonable option for patients than before arthroscopic repair was feasible.