

# SHOULDER DISLOCATION & SUBLUXATION



QUEENSLAND  
ORTHOPAEDIC CLINIC

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## DEFINITIONS

A shoulder that dislocates comes all the way out of the joint. Significant trauma is usually required to cause a shoulder to dislocate. The usual direction of dislocation is the front or anterior. It can go out at the bottom or inferior, or a combination of anterior and inferior. Very rarely does it go out the back or posterior. Anterior dislocations often occur when the arm is outstretched and is forced backwards, for example, as when arm tackling. It is usually quite painful and there may be partial numbness of the shoulder, arm and hand. Most of the time, a doctor has to put it back in place (reduce the dislocation).

A shoulder that subluxes is one that comes part of the way out of the joint, but not all the way and then goes back in, usually on its own or when the patient wiggles their arm or changes the position of the arm. This occurs with less significant trauma than a dislocation. Subluxation, like dislocation, often occurs when the arm is outstretched as in throwing a football or baseball. It is painful and often the arm feels weak, numb or "not there". The first time a shoulder subluxes is usually rather painful and the shoulder may be sore for several days.

## RECURRENCE

The main significance of subluxation and dislocation is that, after the first time, recurrence is very likely, especially in younger patients. The recurrence rate in patients under 25 years old, with or without treatment for the initial episode is probably 80% or more. The recurrence rate goes down as age advances. Backward or posterior dislocation of the shoulder is rare and usually associated with a seizure disorder or high velocity trauma. Backward or posterior subluxation is also relatively rare and is most often seen in football players.

Because of the high recurrence rate, the goal of any treatment is to reduce the possibility of recurrence. The minimum treatment for the first time dislocation should be immobilization in a sling for 2 – 3 weeks. In spite of this treatment, the recurrence rate is still fairly high. If the shoulder is not immobilized after a dislocation, the chances of redislocation are extremely high with unrestricted activity in the first 1 – 3 weeks.

Once a shoulder dislocates a second time, it will almost always continue to redislocate with the arm in certain positions and often with less and less trauma.

It is my opinion that once a shoulder subluxes, it will probably continue to do so, even if it is immobilized for 3 – 6 weeks. If, however, treatment is sought for first time subluxation, immobilization should be done for 2 - 3 weeks to take advantage of the off-chance that it will reduce the recurrence rate.

## ANATOMY

Further discussion of treatment options requires some basic knowledge of the anatomy of the shoulder joint.

The shoulder is not a true ball and socket joint like the hip. One side is round and the other side is flat. The round side is called the humeral head and the flat side is the glenoid and is part of the shoulder blade. This comprises the shoulder joint. The bones that form the shoulder joint, because of their shape, do not provide much, if any, built-in stability.

The structures that do provide stability are the ligaments which surround the joint and are attached to the glenoid on one side and the humerus on the other side. These ligaments are most prominent in the front, underneath and in the back of the joint.

On the top of the shoulder, there is a group of tendons attached to muscles which are called the rotator cuff. These tendons that make up the rotator cuff are not generally involved in a shoulder that dislocates except in patients over the age of 40. Overuse of the shoulder, such as with throwing, can lead to irritation of the rotator cuff muscles and tendons as well as weakness. Some athletes who do a lot of throwing or participate in overhead racquet sports develop subluxation secondary to this activity and then develop a tendonitis of the rotator cuff as it tries to compensate for the instability of the shoulder.

In this group of patients, the initial treatment should be to strengthen the rotator cuff musculature, to use nonsteroidal anti-inflammatory medication, and rest. Failure to respond to this treatment may lead to surgical recommendation to correct the instability.

The ligaments described above which provide stability to the joint are actually underneath the rotator cuff tendons. These muscles and tendons do support the shoulder, but their main function is to move the arm and shoulder. The ligaments, anterior (front), inferior (bottom) and posterior (back), give the joint stability.

A shoulder which dislocates or subluxes is one in which the ligaments have either been torn and then healed in a stretched or elongated position or have been torn away from the bone. When they are torn away from the bone, it is usually from the glenoid or the flat side of the shoulder joint. Sometimes both can occur. In shoulders which sublux, the ligaments have usually been stretched.

Some patients have what we call multi-directional instability (MDI). These patients can sublux in any direction, usually anterior and inferior. It can be all directions, anterior, inferior and posterior.

#### TREATMENT OPTIONS

In order to arrive at precise treatment options, it is necessary to establish as nearly as possible, an exact diagnosis as to which way the shoulder is going - front, back, inferior, or in a combination of these. This can sometimes be done on the basis of your history (your account of how you got hurt and the symptoms which you have described to me), examination and plain x-rays. Occasionally, a sophisticated test called an MRI (Magnetic Resonance Imaging) scan is used to help establish a diagnosis. This is a test done in X-ray departments as an outpatient procedure, but does not involve the use of X-rays and gives us a fairly accurate picture of the status of rotator cuff tendons, ligaments and other structures in and around the shoulder. Often a contrast material is injected into the shoulder during the MRI scan to better outline the damage, and allow planning for any potential surgical procedures.

Occasionally, to establish with precision the exact direction of the dislocation or subluxation and other problems, it is necessary to examine the patient under anaesthesia and arthroscope the shoulder. An arthroscope is a small telescope inserted through a small incision which allows us to see inside the joint.

I have mentioned earlier the initial treatment for the first-time dislocator or subluxer. In addition to immobilization, appropriate strengthening exercises are recommended after removal of the immobilization. Resumption of athletic activities can be taken up on an individual basis, but 6 - 8 weeks after injury is minimum and three months is probably safer.

Some athletes may want to consider surgical reconstruction of the shoulder after the first dislocation because of the high incidence of redislocation. The reason for considering this is that, if the athlete is going to continue participation, then often the second dislocation occurs at an inconvenient time and necessitates more time out of athletics. This matter can be discussed with those of you who wish to consider this individually.

As mentioned previously, after the second dislocation or subluxation, recurrence is quite likely. Exercises to strengthen the muscles are important in the overall rehabilitation of the shoulder. Unfortunately, strong muscles will not prevent a recurrent dislocation or subluxation. This goes back to the earlier discussion regarding the role of ligaments in furnishing stability to the joint. That is where the problem is, not primarily with muscles and tendons.

The symptoms of recurrent dislocation or subluxation can be controlled to some degree by activity modification. This means avoiding certain arm positions and athletic activities which require the arm to be placed in these positions.

## SURGERY

For most patients with recurrent dislocation or subluxation, surgery is necessary to control the symptoms. After I have taken your history, performed an examination and viewed your X-rays and/or MRI scan, I will probably have a good idea as to whether your diagnosis is subluxation or dislocation and generally have a reasonably good idea of the direction of the instability.

The surgery usually involves an examination under anaesthesia to confirm the direction of instability and is called an arthroscopy. At arthroscopy, it is usually possible to tell whether the ligaments have been stretched or torn away from the bone or both, and the direction of dislocation or subluxation.

The surgical repair can be performed either arthroscopically ('key-hole surgery') or via a larger incision.

## OPEN SURGERY

For the patient with recurrent dislocation or subluxation who has torn the ligaments away from the bone, which is called a Bankhart lesion, an incision is made in front of the shoulder, and the ligament is reattached to the bone with sutures or stitches.

If the dislocation or subluxation is secondary to stretched ligaments, an incision is also made in the front of the shoulder, the ligaments are tightened and then secured with stitches or sutures. Sometimes patients have some of both problems, that is stretched ligaments and also torn away from the bone, in which case both of the above could be carried out.

Tightening up of the ligaments is called a capsulorrhaphy in medical terms or an inferior capsular shift. For the purposes of this discussion, capsule and ligaments mean the same thing. For patients with an MDI or multidirectional instability, a capsular shift is necessary.

For patients with a pure posterior or backward subluxation, incision on the back of the shoulder is usually carried out and the ligaments tightened from the back. In most patients with an MDI however, the

prominent instability pattern is an anterior and inferior one and what posterior instability is present can generally be corrected from the front. Most patients will go home the day after surgery and will have a sling for comfort.

## ARTHROSCOPIC SURGERY

The same structures are repaired, but via key-hole surgery, using three small incisions. The only advantages are less pain, and smaller incisions. The down side is that the risk of redislocation in footballers is thought to be slightly higher, however the results are improving .

The time in rehabilitation and time to return to activities is the same, irrespective of whether surgery is performed open or arthroscopically.

## POST-OPERATIVE CARE

A clear, plastic dressing will be applied on the day of discharge so that you can shower. Your arm will be in a sling and a physiotherapy visit 5 – 7 days post-operative is desirable. I will see you 10 – 14 days after the surgery. The sling is usually worn for six weeks. During this period it is important not to stretch the repair and you will be instructed on how much you are allowed to move the arm.

You will be instructed before the surgery and after the surgery on appropriate rehabilitative exercises. Physiotherapy, as you will learn, is little more than you carrying out exercises to regain your motion and to strengthen the muscles about the shoulder. Some of you will need more supervised physiotherapy than others.

It takes about three months to regain most of your motion and strength.

Time off work or school will vary from one to two weeks. Work activities involving full strength and motion will require about three months. I ask all patients to stay out of athletic activities for six (6) months after surgery. We have found that the recurrence rate after surgery is much higher if you return to athletics at less than six months.

What you can expect from the surgery is to significantly reduce the likelihood of redislocation or resubluxation. Without surgery, the chances of recurrence are at least 90% to 100%. With surgery, the chances of recurrence for all patients overall are about 5%. As a group, football players have a slightly higher recurrence, but this is generally less than 10%. Because of the nature of the sport of football, some recurrences after surgery may have occurred with a normal shoulder. The rate of redislocation in footballers is slightly higher in those who have had an arthroscopic repair

## COMPLICATIONS

As far as complications are concerned, recurrence of dislocation and subluxation are the most common. Fortunately, that is rare. Other complications can occur. Significant loss of motion can happen, but should be rare with diligent attention to rehabilitation and exercise. Small degrees of loss of motion are not uncommon and usually not a problem. Loss of motion can be a problem in the dominant shoulder with athletes involved in overhead throwing or racquet sports. I will discuss this matter individually with those of you in those categories.

Surgical complications such as blood clots and infection can occur, but are extremely rare in my experience. Infection, if it occurs, can be very serious and can result in loss of motion, arthritis and being made worse for having had the surgery. This is very uncommon, however.

Important nerves and blood vessels are close to the surgical area, and there have been reports of injury to these structures. This obviously is a very serious complication, but is very rare. If it happens, it could result in serious impairment to the arm or even loss of the extremity. Small skin nerves are, however, cut in the process of making the incisions, either the incision to reconstruct the shoulder or to do the arthroscopy. This will result in some numbness around the surgical site which should not be a problem other than a minor annoyance that cannot be avoided.

Anaesthetic complications can occur and will be discussed with you by the anaesthetist on the day of your operation. You will have a general anaesthetic and/or may also have some local anaesthetic injected in the base of your neck to numb the arm and shoulder.

It is my hope that this material has provided you with enough information so that you understand what is wrong with you, what your treatment options are and what the anticipated benefits of surgery with its associated risks, complications, time out of school, work and athletics are as far as you are concerned. If you have any other questions, please feel free to ask me or my staff, and we will try to answer these for you.