

FROZEN SHOULDER (ADHESIVE CAPSULITIS)

The shoulder joint is made up of three bones: the shoulder blade (scapula), the upper arm bone (humerus) and the collarbone (clavicle). Surrounding the joint is a loose, bag-like structure formed by ligaments, which is called the joint capsule. Inside the capsule is a small amount of fluid that acts as a lubricant for the joint. The laxity of the capsule allows the wide range of unrestricted movement of the normal shoulder.

CAUSE

For some, as yet unknown, reason an inflammatory response occurs in some people's shoulders that leads to scarring and contracture of the joint capsule. This may occur after an injury or surgery to the shoulder, a period of immobilisation of the limb such as wearing a sling following a wrist fracture, surgery unrelated to the shoulder such as cardiac surgery or, for no apparent reason.

People with diabetes, ischemic heart problems, neck problems and thyroid disease have been found to be more prone to the condition. This condition occurs more commonly in people in the 40 to 60 years age group and more so in women than men.

The main signs of this condition are pain and a gross limitation of shoulder movement. It can occur in both shoulders at the same time. The pain does not usually have a focal point, however it often starts over the outside of the upper arm. The course of the condition usually has 3 distinct phases that alter as the scar tissue forms:

- *The Painful or Freezing stage* during which time your shoulder starts to ache and feel stiff. This progresses to more severe pain especially at night. This stage lasts approximately 6 months.
- *The Adhesive, Stiffness or Frozen stage* during which time the pain lessens but the stiffness increases making it more difficult for you to perform activities of daily living. This stage lasts approximately 6 months.
- *The Recovery or Thawing stage* when the stiffness gradually goes away and you can move your shoulder again. However, full movement may never return. This stage lasts approximately 6 months.

Recovery without surgical intervention can take between 1 and 3 years.

DIAGNOSIS

Diagnosis for this condition is usually based on your history and a physical examination. X-rays or a MRI may be ordered to rule out other causes or underlying injuries. Scans such as a CT Arthrogram, where dye is injected into the joint and X-rays are then taken, may show the presence and degree of the condition.

CONSERVATIVE TREATMENT

Treatment focuses on reducing pain and restoring joint movement. The initial freezing stage is most resistant to treatment making it the most frustrating period of the disease. However, perseverance at this stage is required to improve the possibility of full recovery.

Non-invasive (conservative) treatment aims at reducing inflammation and encouraging movement.

Non-steroidal anti-inflammatory drugs (NSAIDs) are often prescribed for pain relief. Cortisone (steroid) injections directly into the shoulder under X-ray or ultrasound control may also be used to help to reduce the inflammation and relieve pain. Treatments using heat or ice also help to reduce pain.

Physiotherapy is helpful. Initially, the use of heat to relax the shoulder followed by gentle stretching exercises is the main form of physiotherapy treatment. Over vigorous stretching may increase the discomfort.

This progresses to an exercise program aimed at increasing movement and strengthening the muscles. A program of self-administered stretches is often beneficial.

SURGICAL TREATMENT

Surgical treatment aims to restore the movement quickly especially if no improvement is seen over time. Two procedures are possible to achieve this.

One is performing an arthroscopy of the shoulder and cutting into the scarring of the capsule.

An arthroscope is a fibre-optic instrument, often described as a telescope, which is about the diameter of a pencil. It is inserted into the shoulder through a small incision about 1 cm in diameter. Other small incisions (usually two but more may be required) are made in the shoulder so that the instruments that are used to inspect and cut the capsule can be inserted. This enables your surgeon to clearly see the structures within your shoulder, identify problem areas and carry out the procedure required to rectify the problem.

The other older method that is less commonly used involves the use of a full anaesthetic to relax the shoulder enough to allow the surgeon to manually stretch and tear the capsule. This is called a Manipulation under Anaesthetic (MUA) of the shoulder.

Intensive physiotherapy is required after both of these procedures.

AFTER CARE

- It is important to put the shoulder through a full range of motion several times a day.
- Ice packs should be applied at home several times a day to reduce swelling and discomfort.
- Various sorts of pain relieving measures may be used during your hospital stay. The appropriate types to use will be ordered by your surgeon and anaesthetist. More information about the use of these can be obtained from your surgeon. These measures include:
 - Anti-inflammatory drugs
 - Patient controlled analgesia
 - Painbuster infusion
- Pain relieving tablets will be prescribed for you to take home.
- A follow-up appointment will be made for you to see your surgeon in his clinic 10 to 14 days post surgery when your wound will be checked and more information on arm movement provided.
- You should not drive a car until you are able to safely grip the steering wheel in an emergency situation.
- Depending on the type of work you do you made need 4 to 6 weeks off after surgery.

COMPLICATIONS

There are always some risks with any surgery. These include:

- The possibility of infection. This is low and antibiotics are usually given during surgery to reduce the risk even more.
- Damage to surrounding nerves and blood vessels.
- Bleeding around the wound.
- Deep Vein Thrombosis (DVT). This risk is low unless you have had a DVT or have a family history of this. Please inform your doctor if this is the case.
- A rare but possible complication is called Reflex Sympathetic Dystrophy, the exact cause of which is not known. The symptoms include severe burning pain in the whole limb, swelling, acute sensitivity to touch, muscle spasms and sweating. These symptoms can last from 6 to 18 months and may not fully resolve.

Specific risks for this surgery are:

- Recurrence of the condition especially in diabetics.
- Ongoing restriction to the range of motion
- Damage to the original shoulder surgery
- Dislocation of the shoulder during surgery
- Fracture of the shoulder during manipulation
- Damage to the Rotator Cuff tendons

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