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ROTATOR CUFF REPAIR

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ANATOMY

The rotator cuff is the collective term for a group of tendons, which includes the supraspinatus, infraspinatus, teres minor, biceps and subscapularis.(Fig 1) These tendons pass under a bony-ligamentous arch.

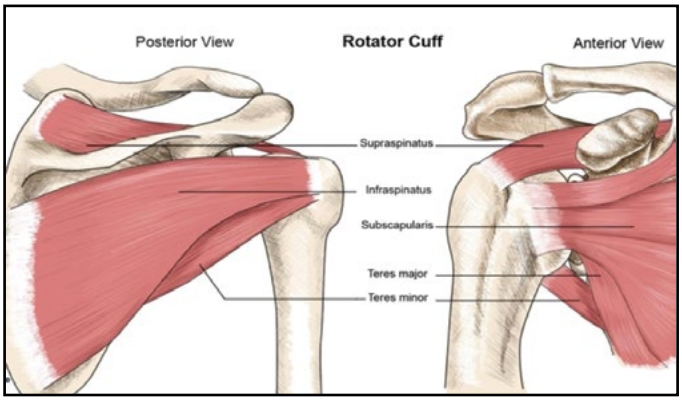
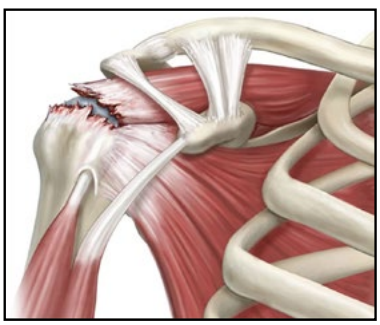


Fig 1

Loss of integrity of the rotator cuff is a common cause of shoulder weakness. Those patients with large rotator cuff defects have difficulty raising the arm or rotating it out towards the side.

ROTATOR CUFF TEARS?

Tearing of the rotator cuff can occur when these tendons become irritated and swollen and eventually wear out or else they can occur as a result of a major force eg, direct injury. The biceps tendon can also become frayed or unstable and may require treatment at the same time.



Tearing of the rotator cuff

Tears of the rotator cuff tendons occur with increasing frequency as the population gets older. It is unusual for a patient younger than 40 years to have a tear whereas up to 50% of patients over the age of 75 years have a tear in one or other rotator cuff tendon. A tear of the rotator cuff does not always have to be painful.

WHAT ARE THE SYMPTOMS?

The most common symptoms which cause a patient to seek medical advice are:

- Pain
- weakness and
- inability to raise the arm

HOW IS A DIAGNOSIS MADE?

Via a thorough history from the patient and also to examine them to assess their range of motion and ability to use and raise their arm. After this, one or more of the following tests may be ordered – a plain x-ray, ultrasound or MRI in order to assess the condition of the bones, tendons and ligaments.

HOW ARE THESE PROBLEMS TREATED?

In patients who have an acute rupture of their rotator cuff after a fall, surgical management is generally indicated to restore function to the arm, however the majority of rotator cuff tears are degenerative in nature and

occur over time. These ones occasionally require surgery and are best managed initially with non-operative management.

NON-OPERATIVE TREATMENT INCLUDES:

- Physiotherapy(stretches/strengthening)
- Anti-inflammatory medication
- Activity modification
- Cortisone (steroid) injections

If this does not help in reducing the pain or if there is poor shoulder function then surgery maybe recommended. For those patients with a rotator cuff tear, a rotator cuff repair is performed.

HOW IS THE SURGERY DONE?

BICEPS TREATMENT:

Treatment of a degenerate biceps tendon may include cutting the tendon (tenotomy) which stops constant traction on this frayed tendon. It may also be treated with cutting the tendon and re-attaching this in a lower position (tenodesis).

ROTATOR CUFF REPAIR:

The purpose of the surgery is to reattach the torn tendon back to the bone.

Fig 2

Under a general anaesthetic, the arthroscope is firstly introduced into the shoulder joint and all pathology is identified. Any surgery that can be done through the arthroscope is done at that time. The repair can either be done all arthroscopic or through a mini open incision. (Fig 2)

Black lines are the patient's bony anatomy landmarks. The solid red lines represent incisions for arthroscopy and arthroscopic rotator cuff repair. The dotted red line shows the mini open incision I use for larger rotator cuff tears and biceps tenodesis.

The rotator cuff tear is then repaired by suturing it back to the bone using stitches and bone anchors. All tears are different and a variable number of sutures and bone anchors can be used. An example is illustrated in Fig 3. The operation involves coming into hospital for 1 night.

Fig 3

Complications related to the surgery can occur but are quite rare. A general anaesthetic is used and there are risks related to this. Some of the risks include infection, nerve and blood vessel damage. Occasionally the shoulder may develop some transient stiffness called capsulitis. This usually resolves itself however it delays the time taken till the shoulder recovers.

Despite surgery, it is always difficult to re-establish a shoulder to 100% working condition. Although a repair can be performed, the tendon may not be of perfect quality, causing mild pain and weakness overhead in the long term. The majority of patients are generally happy after undergoing such a procedure. It is important to note that it can take up to six to twelve months to achieve the desired result.

HOSPITAL STAY AND FOLLOW UP

Patients can expect to stay overnight in hospital. Pain medication is given to make you comfortable.

Patients are placed in a sling and shown how to do some simple shoulder exercises by a physiotherapist before returning home. The skin dressing should ideally remain intact until 2 weeks after the operation where a community nurse, or general practitioner or the surgeon reviews the wound. Patients go home with pain medication and a sling. The sling should be worn for 6 weeks after surgery. Driving is usually possible by 6-8 weeks.

WHAT RESULTS CAN ONE EXPECT?

The tendon generally takes 3 months to reattach to the bone and then it takes you another 3 months or longer for you to achieve a functional range of motion and strength. Recovery can take between 6 to 12 months.