



Mr. Eden Raleigh
FRACS (Orth) M.B. B.S. (Mon) FAOA
Specialising in Shoulder & Knee Surgery

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Rotator Cuff Disease & Surgery





Introduction

The rotator cuff is the group of muscles and their tendons that act to stabilize the shoulder. The four muscles of the rotator cuff, along with the teres major and the deltoid, make up the six scapulohumeral (those that connect to the humerus and scapula and act on the glenohumeral joint) muscles of the human body.

Function

The rotator cuff muscles are important in shoulder movement and in maintaining glenohumeral joint (shoulder joint) stability. These muscles arise from the scapula and connect to the head of the humerus forming a cuff at the shoulder joint.

They hold the head of the humerus in the small and shallow glenoid fossa of the scapula. The glenohumeral joint is often likened to a golf ball (head of the humerus) sitting on a golf tee (glenoid fossa).

Without the rotator cuff, the humeral head would dislocate in the long term..

Rotator Cuff Tear

The tendons at the ends of the rotator cuff muscles can tear, leading to pain and restricted movement of the arm. A torn rotator cuff can occur following a trauma to the shoulder or it can occur through the "wear and tear" of tendons, most commonly that of the supraspinatus under the acromion. It is an injury frequently sustained by athletes whose duties involve making repetitive throws, such as baseball pitchers, volleyball players (due to their swinging motions), water polo players, shotput throwers (due to using poor technique), swimmers, boxers, kayakers, fast bowlers in cricket, tennis players (due to their service motion), and Wii players. This type of injury also commonly affects conductors due to the swinging motions and other movements used to lead their ensemble. It is commonly associated with motions that require repeated overhead motions or forceful pulling motions.

It commonly occurs due to "impingement" - where the tendons rub against the overlying acromion bone.

Long Term Issues

The tear most often increases in size over time. Although the pain may improve, longer term functional problems usually develop.

Pain is often intermittent but deteriorates over time.

With severe and long standing tears, the humerus migrates skyward causing severe arthritis.



Treatment

1. Non-Operative

Although the tear will most likely increase with time, in the older age groups (suffering from other medical conditions) simple therapeutic modalities may be used to help symptoms.

These include rest, avoidance of aggravating factors (eg. Lifting overhead), and simple analgesics & physiotherapy.

Non-steroidal anti-inflammatory drugs can be used with caution. Injection into the area may help the pain temporarily but do not help the tendon repair. Excessive use of steroid injections may be detrimental.

2. Operative

The operation is performed arthroscopically (key-hole). The conversion rate to a mini-open approach is well under 1%.

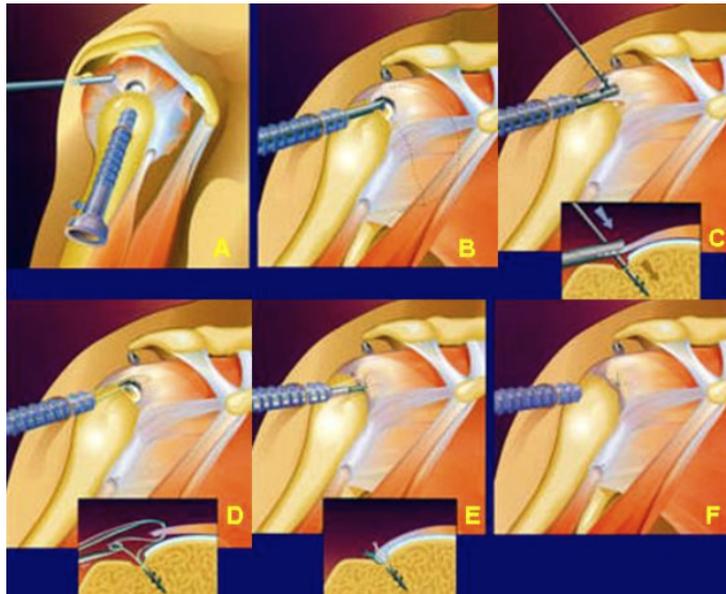
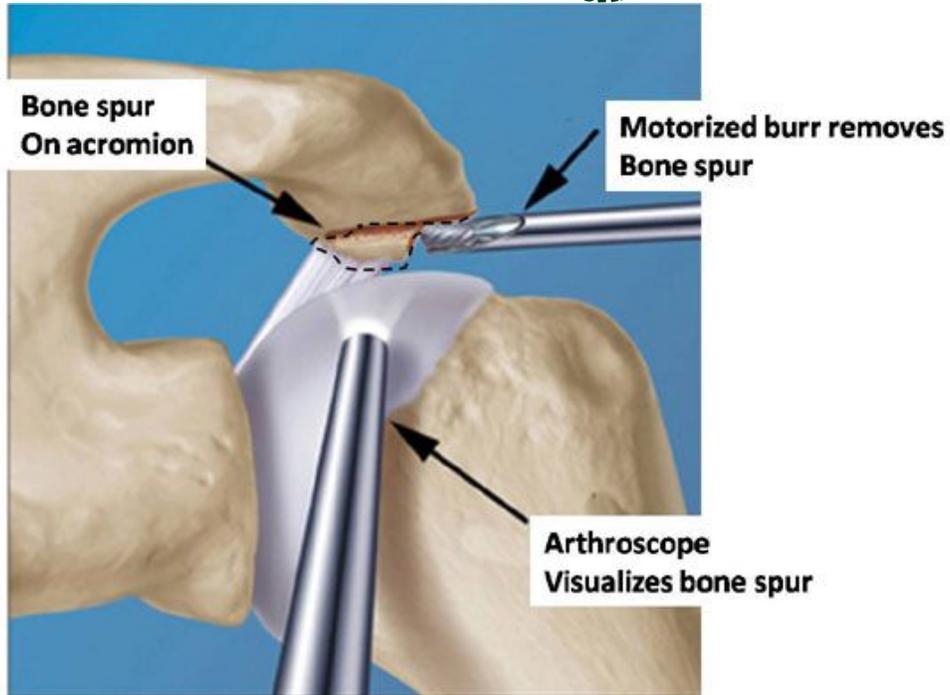
A general anaesthetic is usually used with or without a shoulder block (local anesthetic) 3 small stab incisions (8mm) are usually required.

The first stage of the procedure involves inspecting the shoulder joint. There is often other pathology in this area which is addressed at this stage. This may include bicep tendon tears, joint inflammation, labral (cartilage) tears and loose bodies.

The arthroscope (telescope) is then placed into the subacromial (rotator cuff area) space.

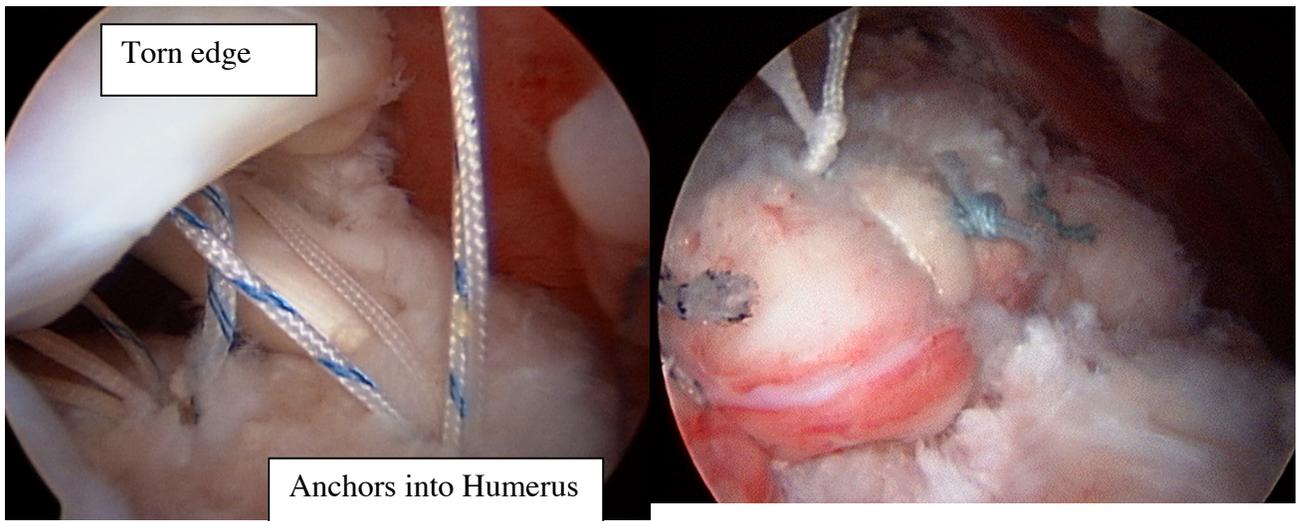
The inflamed tissue (bursa) is removed. The acromion (overlying bone) is then resected to stop impingement (rubbing of the tendon)

The AC Joint is commonly involved and may be treated.



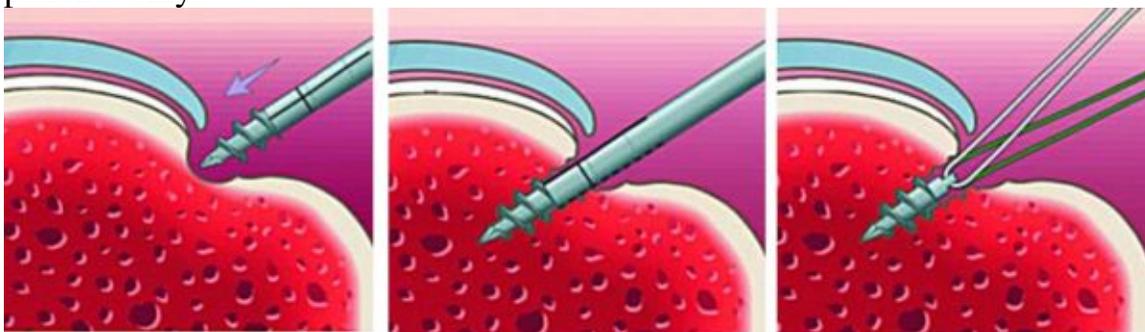
Rotator Cuff anchored and ready for repair

Repaired tendon



The tear is then inspected. A number of bone anchors are placed in the humerus bone with stitches (ropes) attached. These are then threaded through the tear so that the tendon is lying against the humerus bone. The bone will need to be roughened to help with the healing.

The Keyhole approach is aimed at better patient outcomes. It provides better pain relief, higher functional shoulder scores and similar tendon healing rates. The rates of stiffness following surgery are reduced, and most patients will stay in hospital for 1 day, although 50% will be day-patients only.



1. Anchor (attached to inserter) being directed to the insertion point on the bone.

2. Anchor screwed into the bone.

3. Inserter removed, exposing the sutures (attached to the anchor)



Post-Operative

The dressings will be bulky, but can be removed at day 3. Under these bulky dressings, there will be smaller rectangular dressing which need to be left intact until review.

Wound ooze is common and expected. The operation is performed "under water" using a pressure unit designed to increase the "space" to provide safe instrument insertion. The body will resorb most of this fluid, but the wounds will ooze for the first few days.

The wounds should be kept dry otherwise.

The swelling will resolve over the first few days. A shoulder protocol will outline all the post-operative instructions and limitation.

You will be placed in a sling for 4-6 weeks.

A full copy of the shoulder protocol is available on our website.

Rehabilitation

Perhaps the most important factor in obtaining good results is the rehab program. Shoulders take more time than other joints to recover and the recovery usually takes 3-6 months. You will notice the improvement early but until the movement is restored, the shoulder is still "hibernating". By 12 weeks, patients are usually 80-85% of their end-result, and by 6 months 90%+. However, the early improvement will be noticeable.

The tendon will heal in 6-8 weeks in most cases, but the main issue is the inactivity of the muscle-tendon unit from the time the tendon tore until the surgery, and this is the rate-limiting step. By 6 weeks after the surgery, the shoulder is free to mobilise without the sling, but no heavy lifting will be allowed for another 6 weeks.

While the sling is being worn, driving is not permitted. You will be able to eat, drink, write and type. Anything which involves use of the elbow, wrist and hand while keeping the shoulder still is allowed.

We generally allow you to follow the Shoulder Protocol Booklet (which will be given to you after the surgery with the photos from the operation), for the first couple of weeks. After 2 weeks, we recommend continued use of our protocols with a physiotherapist. We are happy to provide you with a physio list in your area if you do not have one.



CONSENT – Mr Raleigh

I have informed _____ for the operative procedure:

Arthroscopy of _____ shoulder and decompression +/- rotator cuff repair. This may involve A.C. joint surgery, biceps tenotomy and labral debridement.

+ _____.

Doctor Raleigh has discussed the treatment of my condition and I acknowledge that I have been consented to this admission for this surgery.

I understand that

- a. The administration of medicine/anaesthetic/blood transfusion may be needed in association with this procedure and that these carry some risks.
- b. Hospital staff administer care under the treating doctors direction, or in an emergency, medical and nursing care is administered as required.
- c. I may withdraw consent I gave my doctor any time.
- d. Occasionally, specialist trainees are present for operative cases, but they will not be involved in decision making or other involvement other than assisting or observing.

I acknowledge that I listed to the explanation the doctor gave me and read the consent details regarding the risks, benefits, need and complications of this procedure.

Signature of patient _____ Date _____

Out of Pocket _____

Signature of Mr. Raleigh _____

1. Infection: The true infection rate is unknown following this surgery but is not common. Symptoms to consider are feeling unwell, fevers, intense pain and pus from the wound. If this occurs please contact the Rooms or the nearest Emergency Department.

2. Stiffness: All surgery carries a risk of stiffness. This may also be related to the type and extent of the rotator cuff tear. It is important to carefully follow the shoulder guidelines.

Shoulder stiffness, otherwise called "frozen shoulder" and it may occur after any surgery on the shoulder. The reason for a frozen shoulder is usually due to the stimulus of surgery and making inflammation and then scarring. This problem usually resolves with a physio but the overall recovery may take longer than if the problem does not occur. Some patients may require a "hydrodilatation", involving an injection of fluid to help remove the scar build up.

3. Nerve/Artery Damage: Rare, but reported in the literature. If the patient develops tingling, numbness, lack of movement in the hand or change of colour in the limb, immediately contact the Rooms or the emergency department. NOTE: Some patients are given an anaesthetic block which will cause numbness but should wear off by 12 hours.

4. Re-tear and pain: The re-tear rates are related to the size of the tear and patient factors. Smoking, diabetes, general medical condition such as cardiovascular and respiratory disease and patients who have an active Workcover or TAC claim are at increased risk.

5. Blood Clots: This is uncommon

6. On rare occasions a patient may have more pain or less function or both after surgery, despite no reason why this may be the case.

7. **Any operation** carries a very small risk of the following: Burns to skin or tissue, nerve compression, paralysis, death, scar issues, allergy, failure of surgery and need for redo-surgery, reaction to implants, loosening of implants, inability to repair pathology.

This quotation is calculated on the basis of Mr. Raleigh's fee structure. The item numbers defined are provisional and if altered, your gap will not change. If you have NO private insurance, you will also be liable for the gap between the schedule fee and Medicare rebate. I acknowledge that I have reviewed the above quotation and understand that I am liable for Mr. Raleigh's Personal Gap costs. I acknowledge that I have read this estimate. I understand that I am liable for Personal Gap costs from both the anaesthetist and assistant surgeon. (Please contact Mr. Raleigh's rooms for contact details of your anaesthetist and Assistant if required). You may also contact the hospital and quote the above item number(s) to obtain an out of pocket hospital costing. I am aware that the amount quoted may change in the event of any additional treatment received.



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Post-operative Shoulder Exercises

There are 4 stages of exercises. Stage 1 is used for the first 2 weeks, followed by stage 2 and continuing as determined during your follow-up consultation.

Findings: _____ Date of Surgery: _____

Rotator Cuff Intact

S.Sp/I.S./Sub.S. Tear Size _____ Retraction _____

Fixation _____

Labrum Intact

Tear _____ Fixation _____ Decompression

Yes No ACJ _____

Other _____

My next appointment is on _____

at 89 Erin St. Richmond 3121

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355 Main St Rd Lilydale , 3140

195 Whitehorse Rd, Blackburn, 3130

Restrictions _____

STAGE 1

There are several stages of rehabilitation after your shoulder surgery. These exercises are for the first stage, starting right after surgery. These should be followed for the first 2 weeks.

**DO EACH EXERCISE 10 TIMES
REPEAT 3-4 TIMES DAILY**

Warm-up: Pendulum exercises

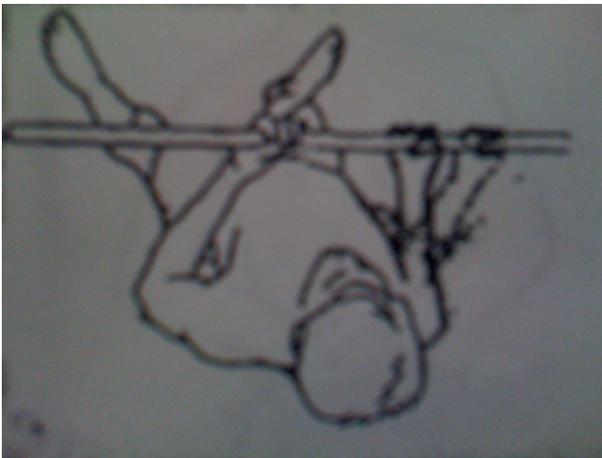


Stand, bending forward from the waist. Hold onto table or chair with your good arm, operated arm hanging loose. Gently swing arm like a pendulum:

- Circles (clockwise)
- Circles (anticlockwise)
- Forwards/Backwards
- Side to Side

Passive Auto-assisted exercises

With all of these exercises, your good arm does all the work, Your operated arm should relax and let the good arm move it.



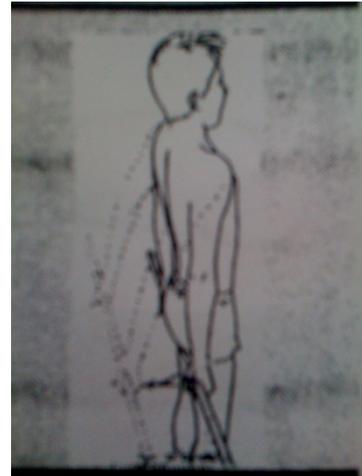
1. Lie on your back, with elbows tucked in. Holding a stick as shown. Push with the good hand so that the operated arm is rotated outwards, away from the body.



2. This exercise can be done either standing or lying on your back.

Hold stick in both hands. Lift upwards as high as possible with your good arm, pulling the operated arm along. Slowly lower. (DO NOT LIFT WITH OPERATED ARM)

3. Standing, holding a stick behind your back in both hands. Use your good hand to push the stick backwards, away from the body, as far as possible, pulling the operated arm along. Remember to stand straight





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4. Stand with your hands behind your back. Hold your operated arm at the wrist with the good hand. Using your good arm, pull your operated arm upwards as far as possible towards your shoulder blades, bending your elbows.

STAGE 2

**DO EACH EXERCISE 10 TIMES
REPEAT 3-4 TIMES DAILY**



1. This exercise should be done on your back.

Lift your operated arm as high as possible (But using your other arm), keeping your elbow straight. After you lift as high as possible, slowly lower your arm. (Again always using the other arm for force)

2. Do this exercise while standing.

Move your operated arm backwards in a straight line keeping your elbow straight. After you lift backwards as high as possible, slowly lower your arm.



3. Lay on your side (with the operated arm up). Keep your elbow bent and move your arm up towards the ceiling. Lift as high as possible but keep your elbow at your side. Lower slowly.

STAGE 3

**DO EACH EXERCISE 10 TIMES
REPEAT 3-4 TIMES DAILY**

Use rubber tubing, Theraband or elastic.

1. This exercise can be done either standing or sitting. Reach behind your back and move your hand up the middle of your back as high as possible

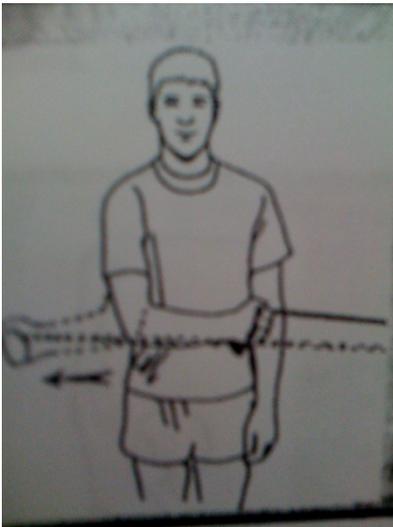
If you feel no pain, progress by holding onto a towel with your operated hand behind your back. Place the towel over the opposite shoulder and pull it up with your good arm. This should gently force your operated arm up your back.



2. Start with your arm at your side. Attach the elastic to a solid object behind you (for example a door knob). Keep your elbow straight and pull your arm forward. Do not lift higher than shoulder level. Lower slowly.

For the next 2 exercises, start with your arm at your side and bend your elbow. Attach the elastic to a door knob.

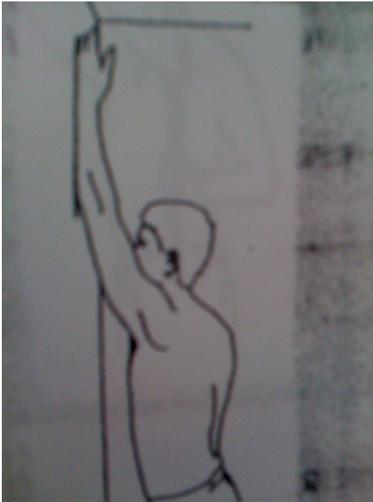
3. Stand beside the door knob and pull your hand in towards your body. Make sure you keep your elbow bent and keep it tucked into your side. Then release slowly.



4. Stand beside the door knob and pull your hand away from your body. Make sure you keep it tucked into your side. Then release slowly.

STAGE 4

**DO EACH EXERCISE 5 TIMES
REPEAT 3 TIMES DAILY**



1. Stand in front of a wall and reach up as high as you can. Keep your elbow straight.

Lean gently forwards, until you feel a stretch in your shoulder, hold for 10 seconds.

2. Stand in a doorway, with your arm bent as shown. Hold the doorframe with your hand.

Slowly turn your body away from that hand, until you feel a stretch in your shoulder. Hold for 10 seconds.



3. Hold a towel over your shoulder with your good arm. Grab the lower end behind your back with the operated arm. Pull up with the good arm so your operated arm is pulled



WOUNDS

The operation is performed arthroscopically (Key-Hole)

There will be very small (5mm) wounds, varying in number. They will be sutured internally, and usually only closed at the skin with small “steri-strips”. These are essentially small dressings.

The operation is performed “under water” - meaning high-pressure fluid is used to distend the shoulder to allow the small instruments to be inserted. This means that there is an expected amount of wound ooze. This ooze is merely the water used during the operation, escaping through the dressings. It is generally not blood, but occasionally it is blood-tinged. This is not a concern and may be present for up to 4-5 days.

The wound should be kept dry for 2 weeks.

The external, heavy padded dressing may be removed at 5 days, but the smaller (5-6 cm) rectangular dressing should be left intact. Although they may be wet at first, they will dry out.

If there are any concerns, please ring the rooms.