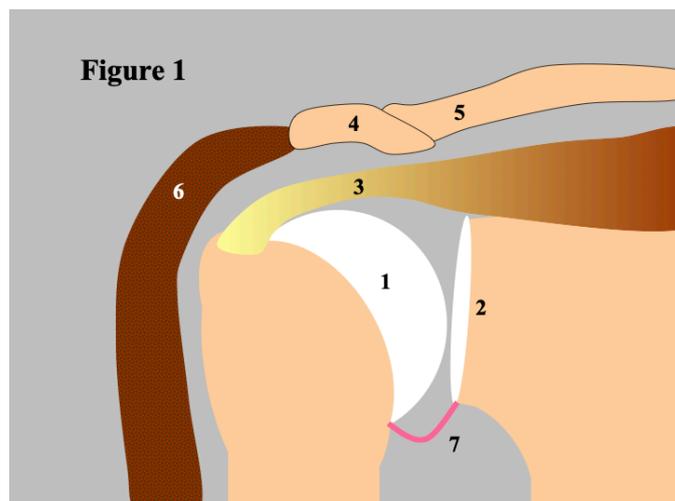


Calcific tendinitis and its treatment

Figure 1 is a cartoon diagram looking directly at a right shoulder:

- 1 - humeral head, the ball of the main ball & socket joint of the shoulder
- 2 - glenoid, the socket of the main joint
- 3 - rotator cuff, the strong tendons around the shoulder from the shoulder blade muscles
- 4 - acromion, the bony roof of the shoulder which is part of the shoulder blade
- 5 - clavicle - the collar bone which joins to the acromion as the acromioclavicular joint or ACJ
- 6 - deltoid, the big muscle around the outside of the shoulder which gives its shape
- 7 - capsule, the deepest lining of the shoulder



[Calcific tendinitis](#) is the term used for inflammation of the rotator cuff tendons (3 in Figure 1) around the shoulder caused by deposits of calcium material within the substance of the tendon. It is not known exactly why such deposits come about but it is not related to dietary intake of calcium (eg dairy products such as milk & cheese) nor the body's metabolism of calcium but more likely a response to micro-trauma to the fibres of the tendons.

Deposits of calcium vary in size, site and consistency and change with time. As such clinical symptoms experienced by patients also vary from mild subacromial pain (see information sheet on 'subacromial impingement') to acute severe debilitating pain that prevents sleep and any sort of shoulder movement. On occasions symptoms can be so acute and severe that patients have to present to a hospital Emergency Department. Such deposits are seen on plain X-rays which are the initial investigation of choice.

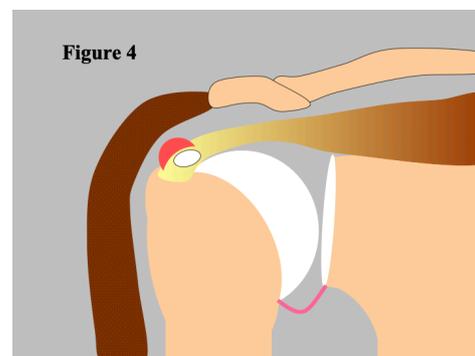
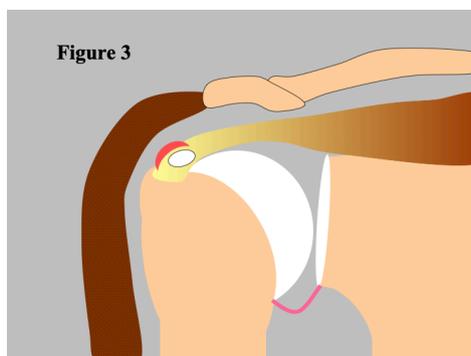
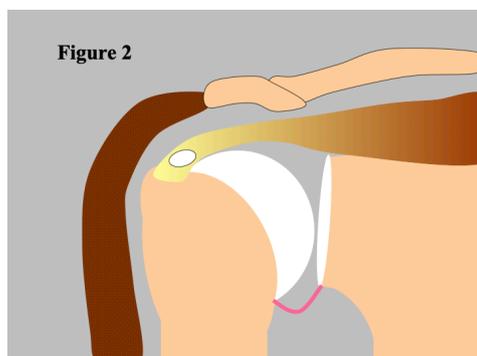
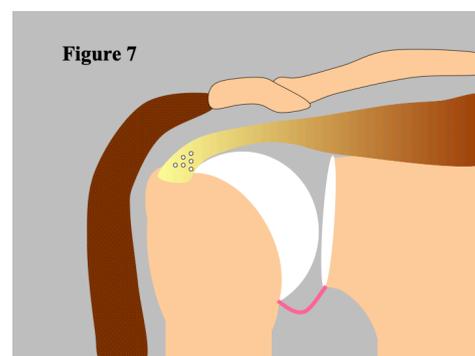
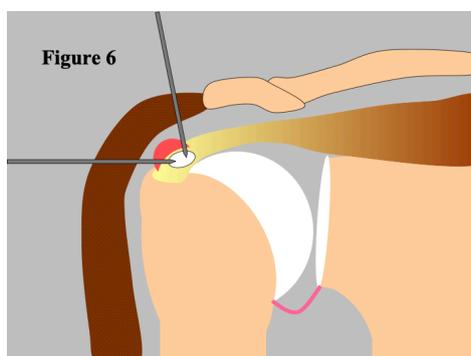
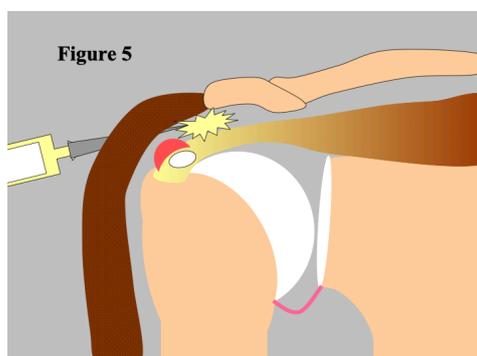


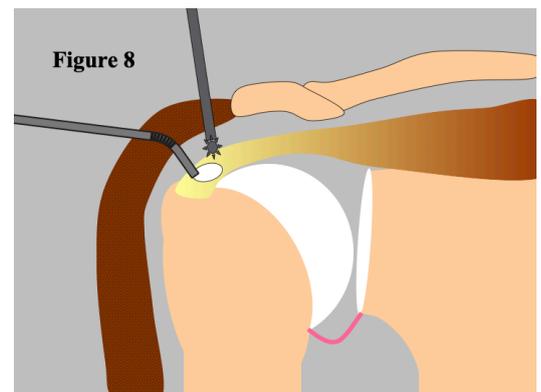
Figure 2 shows the white calcific deposit within the substance of the rotator cuff tendon. This may become inflamed as in Figure 3 and as the body tries to absorb the calcium material or with attritional aggravation as the inflammation rubs the roof of the shoulder (the acromion) during shoulder movement becoming even more inflamed as in Figure 4. The natural history is that body will absorb the calcium but a patient's symptoms may be severe enough to require interventional treatment during this process.



If simple measures such as rest and activity modification (avoiding the actions that bring on the pain), rest, tablet painkillers (eg paracetamol 1g = 2 tablets four times per day) and anti-inflammatories (eg ibuprofen 400mg = 2 tablets three times per day after food) and simple physiotherapy exercises fail then a steroid injection to bathe the inflamed tissues with strong anti-inflammatory can be tried (Figure 5).

An injection may reduce the pain and allow improvement in function but won't directly affect the underlying calcium deposit. To try and remove the calcific material, or at least help the body to do so, a technique called 'barbotage' can be used. Using local anaesthetic instilled into the skin of the shoulder and into the subacromial space a [shoulder surgeon](#) or radiology doctor can use an ultrasound machine to locate the exact position of the calcium and pass needles into the shoulder to break up, suck up and wash out the calcium material as shown in Figure 6. This aims to remove the calcium deposit or at least reduce its volume (Figure 7) and trigger the body to absorb the residual material to help alleviate the symptoms.

The barbotage procedure is usually performed in a radiology department or outpatient treatment room. If it is not successful because perhaps the calcium material is too hard or simply not tolerated by the patient then the final option is to perform an arthroscopy keyhole operation under general anaesthetic to identify and remove the calcium deposit (Figure 8) using surgical instruments.



The risks and potential complications of such surgery are small but include failure to achieve the desired outcome with persistent pain, weakness, stiffness (post-operative frozen shoulder), nerve or blood vessel damage (some bruising is normal), numbness, infection, further surgery for whatever reason, prolonged rehabilitation, the medical risks of any operation such as blood clots in the legs or lungs (DVT or PE), heart attack (MI) or stroke (CVA).

These example X-rays show a large calcific deposit outlined in red in the left hand image which has completely disappeared in the right hand X-ray following successful treatment.

