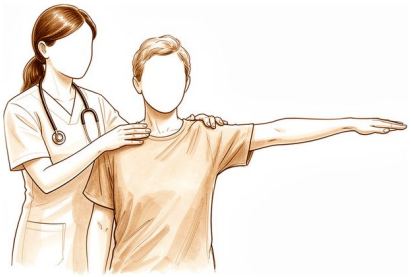
CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION — IN DEPTH

Calcific Tendinitis

Calcific tendinitis of the shoulder: a chalky calcium deposit builds up inside one of the rotator cuff tendons, often the supraspinatus, and can cause sudden severe pain when it inflames the surrounding tissue.



What you're feeling

You may notice pain in the front or side of your shoulder. It often feels deep inside the joint. This pain can flare up suddenly and feel intense. You might also experience a dull ache that lingers after activity.

It is important to know that not all calcium deposits cause pain. Only one third of calcific tendon deposits in the shoulder are painful. Many people have these deposits without any symptoms at all. If you do have pain, it is often linked to wear-and-tear of the tendons around your shoulder blade.

Your pain may worsen when you lift your arm above your head. Simple tasks like reaching for a cup on a high shelf can become difficult. You might feel stiffness when you try to comb your hair or reach behind your back to fasten a coat. Lifting even light objects, such as a kettle or a bag of groceries, may trigger sharp discomfort.

Night pain is common. You might find it hard to lie on the affected side. The pain can keep you awake or wake you up suddenly. You may also feel stiff when you first wake up in the morning. This stiffness often eases as you move around, but activity later in the day can bring it back.

The severity of your symptoms can depend on the size of the deposit. Patients with calcific lesions larger than 1 cm have a 2.8 increased likelihood to undergo operative treatment. This suggests that larger deposits are more likely to cause significant issues that do not resolve with rest alone.

Most cases improve with conservative treatment. Conservative treatment for calcific tendinitis of the shoulder showed clinically significant improvement, with 72% of excellent or good results regardless of the location, radiologic type and size, and initial symptoms of calcific deposits. This means that for most people, non-surgical approaches like rest, medication, or therapy can provide substantial relief.

However, some people experience persistent pain. If your pain remains severe despite conservative care, your surgeon may discuss other options. These can include procedures to remove the calcium deposit or shock wave therapy to break it down. The goal is always to reduce your pain and restore your ability to use your shoulder for daily tasks.

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What's actually happening

Calcium deposits often form in the tendons of your shoulder without you ever noticing. These build-ups are quite common in the general population. However, only one third of these deposits cause any pain at all. You might have them and never know.

When they do hurt, it is because the calcium sits inside a tendon. This is a strong rope-like tissue that connects your muscle to your bone. The deposit acts like a hard pebble inside a soft sleeve. It rubs against the surrounding tissue and creates inflammation. This swelling presses on nearby nerves and causes significant discomfort.

The pain often feels sharp or deep in the shoulder. It can make it hard to lift your arm or reach behind your back. In some cases, the body tries to break down the calcium on its own. This natural process can actually increase pain temporarily before things improve.

Your surgeon will look at scans to see where the calcium is. They check if it is near the surface or deep inside the tendon. The size of the deposit matters too. Lesions larger than 1 cm are more likely to need surgery if conservative treatments do not work.

Sometimes, a tear in the rotator cuff happens alongside the calcium. This tear is the main factor that affects how well your shoulder function recovers. It is important to check for this because it changes the treatment plan.

We also look at the space under your collarbone. Some theories suggested that a high bone index here causes more pain. However, evidence shows this is not the case. The space looks similar whether you have calcific tendinitis or other shoulder issues.

Understanding what is happening helps us choose the right path. Most people improve with non-surgical care. This includes rest, anti-inflammatory medicines, or shock wave therapy. If the deposit is large or persistent, we may recommend a small keyhole surgery to remove it. This clears the blockage and lets the tendon heal properly.

What we can do about it

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. Calcific tendon deposits are common, but only one third cause pain. If you are in that group, we begin with self-management and physiotherapy. We aim to reduce inflammation and restore movement. You will likely try oral anti-inflammatory medication and specific exercises. This approach is the mainstay of treatment for most patients. We also consider ultrasound-guided needling (barbotage) or extracorporeal shock wave therapy (ESWT) as first-line treatments. ESWT uses sound waves to break down deposits. It is safe, well-tolerated, and very effective for chronic cases. Radial ESWT can improve shoulder function by 43% and reduce pain by 14.28% compared to standard physiotherapy alone. We give these conservative measures time to work before considering further steps.

If pain persists, we move to medical management. Corticosteroid injections can provide significant short-term relief by calming the inflamed tissue. These injections are often combined with needling to help flush out the

calcium deposits. Needle aspiration of calcific deposits is safe and effective for relieving pressure in the tendon. While some clinics offer hyaluronic acid or PRP, our evidence base highlights corticosteroids and needling as the primary medical interventions for this condition. We monitor your response closely. If symptoms are protracted, they can impact your quality of life and time off work, so we adjust the plan to get you back to normal activities as soon as safely possible.

Surgery is considered only when conservative care has not given enough improvement. We perform arthroscopic debridement, which is a keyhole procedure to remove the calcium deposits and smooth the tendon. This is safe and effective, even if the calcium has spread into the bone. Before any procedure, we conduct a full assessment including imaging to confirm the diagnosis and rule out other issues like rotator cuff tears, which can sometimes be hard to spot on scans when calcific tendinitis is present. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. A clinic assessment (history, examination, and imaging where needed) establishes the diagnosis. For degenerative or long-standing problems we usually try non-operative care — activity change, physiotherapy or hand therapy, splinting, and injections — and consider surgery when that has not given enough improvement. For structural or acute problems, surgery may be recommended straight away, without a preceding non-operative trial.

What to expect

Calcific deposits in your shoulder are common, but they do not always cause pain. In the general population, only one third of these deposits are painful. If you are experiencing symptoms, the first step is usually conservative management. This approach involves non-surgical treatments and time. For many people, this leads to significant improvement. Research shows that 72% of patients achieve excellent or good results with conservative care, regardless of where the deposit is located or how large it is.

Your recovery depends on the stage of the condition. The calcium deposits go through a natural cycle. Sometimes they break down and are absorbed by your body on their own. This resorption process is often linked to symptom duration and deposit size. For example, extracorporeal shock wave therapy (ESWT) works best if your symptoms have lasted 10 months or less and the deposit is 10.82 mm or smaller. If you have had symptoms for longer or have larger deposits, other treatments may be more suitable.

If conservative methods do not provide enough relief, we may discuss procedural options. These include needle aspiration or arthroscopic surgery to remove the calcium. Needle aspiration can reduce pain noticeably within two months. Arthroscopic removal focuses on clearing the deposit completely. The key to a good outcome is whether any calcium remains in the tendon. If the deposit is fully removed, your functional recovery tends to be strong.

It is important to know that calcific tendinitis can coexist with rotator cuff tears. These tears are more common in people with calcific tendinitis than previously thought. We will carefully assess your shoulder to check for any associated tears. This ensures we address all sources of your pain.

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Overall, the outlook is positive. Most people improve with appropriate treatment. Some may need a combination of therapies over several weeks or months. We will guide you through the options that fit your specific situation, aiming for a return to your normal activities with minimal discomfort.

When to see someone

Calcific deposits in the shoulder are common, but only one third cause pain. You may have these deposits even if you feel no discomfort. However, if you experience persistent pain, weakness, or instability, it is time to seek help. Sudden worsening of symptoms or pain that interferes with your sleep or work also warrants attention. Be aware that locking or giving way can signal a rotator cuff tear, which sometimes occurs alongside calcific tendinitis. Early assessment helps your surgeon determine if the deposits are the true source of your subacromial pain syndrome. Do not ignore symptoms that limit your daily activities.

In more depth

This section goes further than you need for your own treatment decisions. Calcific tendinitis is worth the extra reading because it behaves unlike most shoulder conditions: the deposit is common in people with no pain at all, the body usually dissolves it without help, and the treatment that removes the calcium is not the one that relieves the pain fastest.

THE DEPOSIT IS A COMMON FINDING, NOT AUTOMATICALLY A DIAGNOSIS

A calcium deposit reported on your scan is easy to read as the cause of the problem, because it is visible and the pain is real. The prevalence data complicate that. Among **1,219** adults, deposits were present in **7.8% of people without symptoms** and **42.5% of those with subacromial pain syndrome** [1]. In a separate series of **302** shoulders, deposits were frequent in the general population and **only about one third were painful** [2].

So the deposit raises the probability that it is the source, substantially – but roughly one in thirteen painless shoulders has one too. What appears to shift a deposit from silent to symptomatic is partly size and position: the highest likelihood of genuinely symptomatic disease was in women aged 30 to 60 with subacromial pain and a deposit longer than **1.5 cm** [1], and pain correlated with location in supraspinatus and with involvement of more than one tendon [2].

IT USUALLY DISSOLVES, AND THAT SHAPES EVERYTHING

The natural course is towards resorption, which is why so many treatments appear to work. The clearest illustration comes from a randomised trial in which every patient had needling and lavage and was then randomised to a steroid or saline injection: at twelve months the calcification had resorbed in **83%** of the saline group and **74%** of the steroid group [3].

Read that carefully, because it contains the counter-intuitive result. The steroid **improved pain for six weeks and function for three months** – and had **no significant effect on whether the calcium disappeared** [3].

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Pain relief and calcium clearance are separate processes. A treatment can deliver one without the other, and the visible thing on the scan is not the thing driving the symptoms week to week.

WHICH IS WHY THE NON-OPERATIVE OPTIONS PERFORM ALIKE

If the deposit largely resolves regardless, the treatments are competing to make the interval tolerable rather than to cure. That is what the comparisons show. Across **257** patients, physical therapy, corticosteroid injection and ultrasound-guided barbotage produced **similar rates of avoiding surgery** [4]. In **239** patients the same three approaches were largely successful, with physiotherapy alone carrying the highest failure rate [5].

Among the procedural options, high-energy shockwave therapy is the most thoroughly studied minimally invasive treatment and has been shown safe and effective in the short to medium term, while ultrasound-guided needling has **not** been shown superior to an ultrasound-guided subacromial injection [6]. Pooling **1,258** patients, shockwave, needling and arthroscopy all produced good clinical outcomes [7], and barbotage across **908** patients was safe with a high success rate but has never been compared head-to-head against the other major options [8].

WHAT SURGERY ADDS, STATED PRECISELY

Surgery is not without an advantage, and the size of it is worth quoting rather than characterising. Pooling **2,352** patients from randomised trials, surgical treatment produced **larger improvement in functional scores** and **comparable pain reduction** to non-operative treatment, particularly ultrasound-guided needling – with both routes achieving clinically significant improvement [9]. Among surgical techniques themselves there was **no significant difference**, and removing the deposit alone performed similarly to removing it plus a subacromial decompression [10].

The function-versus-pain split is the useful detail. If pain is the dominant complaint, the evidence does not clearly favour an operation. If stiffness and loss of function dominate and have persisted, it favours one more.

THE ASSOCIATION MOST OFTEN MISSED

Calcific tendinitis is not evenly distributed. In **102** patients, those with an associated endocrine disorder – thyroid disease and diabetes principally – developed symptoms at a **younger age**, had a **significantly more protracted** course, and **more frequently required surgery** [11].

This is worth raising with your GP if your course has been unusually long or began early, not because treating the endocrine condition resolves the shoulder, but because it changes what a realistic timeline looks like. Being told a condition is self-limiting is difficult to reconcile with two years of pain; the endocrine association is one explanation for why the usual reassurance does not fit every case.

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