

# Giant Cell Tumour of Tendon Sheath (Lump on a Finger or Thumb)



Under the microscope, a giant cell tumour of tendon sheath is made up of clusters of multinucleated giant cells (the dark, lumpy-looking cells) mixed with smaller mononuclear cells. It is benign, and it is this giant-cell appearance that gives the lesion its name.

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## What you're feeling

You may notice a small, firm lump on your finger or thumb. This is a benign growth, meaning it is not cancer. It sits on the tendon sheath, which is the slippery covering that helps your tendons glide smoothly. Because of this location, the lump can feel like a hard pea under the skin. It might be painless at first, but as it grows, it can press on nearby nerves or tissues.

The lump can make everyday tasks difficult. You might find it hard to grip objects firmly. Simple actions like turning a key, opening a jar, or typing on a keyboard can become awkward or painful. The mass may interfere with the normal movement of your finger, causing a slight stiffness or a feeling that something is catching in the joint.

Pain often worsens with activity. Using your hand for repetitive tasks can irritate the area, leading to a dull ache or sharp pain. You might notice the discomfort increases after a long day of work or hobbies. Some people experience more pain at night, which can disrupt sleep if you rest your hand in a position that puts pressure on the lump.

In some cases, the growth can involve the joint capsule or the tendons themselves. This direct involvement can lead to higher risks of the lump returning after treatment. If the disease is diffuse, meaning it spreads along the tendon sheath rather than staying in one spot, symptoms may be more persistent. Complete surgical removal is usually the best way to address these issues and restore function.

While most cases are straightforward, recurrent growth is a known risk. Recurrence typically happens within 36 months of removal. If the lump returns, it may cause similar symptoms again. Your surgeon will discuss the best approach to remove the growth and its attachment site to minimise this risk. In rare cases where the

growth is difficult to remove completely, other treatments like radiation therapy might be considered to control local tumour growth while preserving hand function.

## What's actually happening

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Giant cell tumours of the tendon sheath are benign lumps that form on your fingers or thumbs. They grow slowly within the protective lining of your tendons. These are not cancerous and do not spread to other parts of your body. However, they can cause discomfort and limit movement.

Your tendons are like ropes that connect muscle to bone. They slide through a sheath, which acts as a smooth tunnel. This condition involves the tissue inside that tunnel. The lining becomes thickened and forms a small mass. This growth presses against nearby structures. It can make your finger feel stiff or painful when you bend it.

The main challenge with these lumps is that they can return after treatment. Recurrence is the primary risk. Most returns happen within 36 months of removal. Complete surgical resection is the standard treatment. Your surgeon aims to remove the entire lump and its attachment site. This approach helps prevent the tumour from coming back.

In some cases, the disease is more diffuse. This means it spreads over a wider area rather than staying in one spot. Diffuse disease presents challenges due to higher recurrence rates. It can be harder to remove completely without affecting function. In infiltrative cases, radiation therapy may provide local tumour control. This helps preserve hand function while managing the growth.

Surgical treatment for related conditions, such as pigmented villonodular synovitis, often leads to good functional results. Patients typically regain an average of 92% of normal limb function. Long-term outcomes are generally positive, with many patients showing no evidence of recurrence after several years. Satisfactory functional results often mirror the status of the underlying joint.

Your surgeon will assess the extent of the growth. They will recommend a plan that balances complete removal with preserving your hand's movement. The goal is to stop the lump from growing and to keep your finger working well.

## What we can do about it

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Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. 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.

Giant cell tumours of the tendon sheath are benign lumps. They are not cancer, but they can grow and cause stiffness or pain. We often begin with simple measures to manage symptoms. You might adjust how you use your hand to avoid irritating the lump. Physiotherapy can help keep your finger moving smoothly and maintain strength in your hand. Splints may support the joint if it feels unstable. These steps do not remove the lump, but they can help you live with it comfortably for a time.

If symptoms persist, we may discuss medical management to reduce discomfort. Anti-inflammatory medications can help calm the swelling around the lump. In some cases, we might consider an injection to reduce inflammation or pain. While these treatments do not cure the condition, they can provide relief for a period. It is important to note that recurrence is the primary risk with this condition, typically occurring within 36 months of any excision. This means that even if symptoms improve, the lump may return, so we monitor your progress closely.

Surgery is considered when conservative care has reached its limit and the lump continues to affect your daily life. Complete surgical excision is the treatment of choice for most patients. This involves removing the lump and its attachment site to minimise the chance of it coming back. For diffuse disease, where the tumour spreads more widely, surgery can be more challenging due to higher recurrence rates. In rare cases where the tumour is very infiltrative, radiation therapy may be used to control local growth while preserving hand function. We will discuss the best approach for your specific situation during your consultation.

## What to expect

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Giant cell tumours of the tendon sheath are benign lumps on your fingers or thumbs. They do not spread to other parts of the body. However, they can persist or grow if left untreated. The main risk after removal is that the lump may come back. This is known as recurrence.

Recurrence is the primary concern for this condition. If the tumour returns, it typically does so within 36 months of your surgery. In rare cases, new lumps can appear much later. One patient in the evidence had a disease-free interval of 24 years before a multicentric recurrence appeared. Because of this, your surgeon will monitor you for several years after treatment.

Complete surgical removal is the standard treatment. When the entire tumour and its attachment site are removed, outcomes are generally positive. For similar benign conditions in the hand, total excision has resulted in no local recurrences at a mean follow-up of 3.2 years. Your surgeon aims to remove the lump entirely to minimise the chance of it returning.

If the disease is diffuse or infiltrative, it presents more challenges. In such cases, radiation therapy may be used to control the tumour locally while preserving your hand function. This approach helps manage the condition when surgery alone might not be sufficient.

Most patients regain good function after treatment. For related conditions managed with surgery, patients often report functional results that are 92% of normal limb function. You should expect a gradual return to normal activities. Your surgeon will guide you on what to feel and do during this time.

While we cannot promise that the lump will never return, we aim for the best possible outcome. We will keep a close eye on your recovery. If you notice any changes or new lumps, please let us know. Early detection of any recurrence allows for timely management. Your long-term outlook is generally good with appropriate care and follow-up.

## When to see someone

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Giant cell tumours of the tendon sheath are benign lumps on your fingers or thumbs. While they are not cancer, they can grow back after treatment. This recurrence is the main risk. Your surgeon will watch you closely if the lump involves your tendons or joint capsule, as this raises the chance of it returning. In rare cases, a new lump can appear many years later, even 24 years after your first one. See your GP or hand specialist if you notice a new lump, or if an old one returns. They will check for signs of growth and discuss your next steps.

## In more depth

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This section goes further than you need for your own treatment decisions. Giant cell tumour of the tendon sheath is worth the extra reading because its defining problem is recurrence – and the evidence suggests recurrence is driven more by the biology of the individual tumour than by anything about how it is removed.

### RECURRENCE IS A PROPERTY OF THE TUMOUR, NOT ONLY OF THE SURGERY

The instinctive explanation for a lump coming back is that some was left behind. A systematic review of **605** digital cases concluded otherwise: the **intrinsic biology of the tumour appears to play a more fundamental role in recurrence than tumour location or local invasiveness** – with the authors calling for larger prospective studies to identify which tumours are prone to recurrence [1].

That is a genuinely useful thing to be told before an operation. Recurrence after a well-performed excision is a recognised behaviour of this tumour rather than evidence that something went wrong.

### TREATMENT IS ELECTIVE, AND DOING NOTHING IS A REAL OPTION

It is easy to lose sight of this once an operation is being planned. The principle of first-line treatment is complete resection, but treatment is **never urgent**, and the indication should be weighed against symptoms, progression, location and your own circumstances [4].

For a small, painless, slowly growing nodule, watching it is a legitimate choice. The tumour is benign and does not spread, so the argument for operating is about function, size and nuisance – not about danger.

### BUT TWO SURGICAL FACTORS DO MATTER

Biology is not the whole story. In **941** patients with localised-type tenosynovial giant cell tumour, the factors associated with recurrence after resection were **larger tumour size** and **initial treatment with arthroscopy**. Given relatively low complication rates and good functional outcomes, the authors recommend an **open approach with complete resection** where possible to reduce recurrence in high-risk cases [2].

The counterpoint is that arthroscopic excision has been shown effective for the localised type across four joints in a review of **1,448** patients – while in the diffuse type, arthroscopic synovectomy has demonstrated efficacy only at the knee [3].

Reconciling these: for a small, localised, well-defined lesion, either approach can work. As size increases, and for the diffuse form, complete open excision is better supported. The reason is mechanical – this tumour extends in fronds around tendon, nerve and joint, and the parts most easily missed are the ones tucked behind structures that must be lifted and inspected directly.

### WHY THE NAMING MATTERS

The condition now sits under **tenosynovial giant cell tumour**, which covers both the localised form in the hand and the diffuse intra-articular form previously called pigmented villonodular synovitis [4]. They are the same entity in different locations and growth patterns.

This is worth knowing if you read around the subject, because a search will return material about knees and hips that is describing your condition in its diffuse form – and the recurrence rates quoted for the diffuse disease are considerably higher than those for a localised digital lesion. Applying knee figures to a finger lump overstates the risk.

### WHERE RADIOTHERAPY SITS

For diffuse disease that has recurred or cannot be completely excised, adjuvant radiotherapy is sometimes considered. A meta-analysis found that open synovectomy – or synovectomy combined with perioperative radiotherapy – was associated with a **reduced rate of recurrence** in diffuse pigmented villonodular synovitis, while calling for large long-term prospective studies to confirm it [5].

For a localised digital tumour, which is the great majority of hand cases, this does not arise. It belongs to the diffuse, recurrent, joint-based end of the spectrum, and is mentioned here only because a search on the condition name will surface it.

### WHAT IT IS NOT

Despite the name, this is a **benign** tumour. It does not spread elsewhere in the body. The word “tumour” carries weight it does not deserve here, and the concern with recurrence is about repeated local surgery, stiffness and nerve proximity – not about cancer.

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## REFERENCES

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## CQ HAND + UPPER LIMB

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