

Excision of Giant Cell Tumour of Tendon Sheath

Why this operation has been suggested

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 establishes the diagnosis.

Giant cell tumour of the tendon sheath is a common, non-cancerous growth in the hand or wrist. We usually try non-operative care first, such as activity changes or injections. Surgery is recommended when these have not given enough improvement. The procedure removes the growth to relieve pain and restore function. While the condition does not spread, it can return, typically within 36 months of removal. Regular follow-up helps us monitor for any signs of recurrence.

Before the operation

We need imaging like an MRI to plan your surgery accurately. Please fast for seven hours before your appointment. This buffer allows us to bring you forward if the list runs early. Stop taking certain medications as advised by your surgeon. Arrange a lift home and wear comfortable clothing. Bring a list of your current medicines. Most patients do not need blood tests or an anaesthetist review. You may need them only if you have other medical conditions. Your surgeon will give you specific instructions about your medications and preparation steps closer to the date.

On the day

You will arrive at the hospital's surgical admissions unit on the morning of your procedure. You will check in and be prepared for theatre. This is a day-surgery admission, so you do not stay overnight beforehand. You will meet the anaesthetist to discuss your care. This operation is done under general anaesthetic. A regional nerve block is sometimes added for post-operative pain relief – the anaesthetist will discuss this with you on the day.

You are then taken into the operating theatre, where the operation is performed. Once it is finished, you wake up in the recovery area. Nurses monitor you closely while the anaesthetic wears off. They ensure you are stable

and comfortable before you leave. Depending on the procedure and your recovery, you either go to the ward or go home. You will receive clear instructions for your next steps before you depart.

What the operation involves

Your surgeon will remove the benign lump from your tendon sheath. This is the standard treatment for most patients. The method depends on the type of growth. For a small, localised lump, your surgeon may use arthroscopic excision. This involves making two or three small keyhole cuts. A tiny camera and instruments are passed through these holes to remove the tissue. This approach causes minimal damage to the surrounding area.

If the lump is larger or more widespread, your surgeon will perform an open synovectomy. This requires a single cut over the affected area. Your surgeon will carefully remove the entire mass. The goal is to take out all the affected tissue to reduce the chance of it growing back. In rare cases where the growth has eroded nearby bone, your surgeon may also place a bone graft to help rebuild the area.

In some complex cases, radiation therapy may be used alongside surgery. This helps control the tumour while keeping your hand function intact. If the growth is pressing on a nerve, your surgeon will also free the nerve from the pressure. This can help resolve symptoms like weakness or numbness completely.

After the tissue is removed, your surgeon will close the cuts. They will use stitches or glue to seal the skin. A dressing will be applied to protect the area while it begins to heal. You will then move on to the recovery phase to ensure the area settles properly.

After the operation

You will wake up in the recovery ward. We manage your pain with standard medication. Your arm will have a dressing and likely a sling or light support. We do not use hinged braces or rigid supports for this procedure. You must have someone stay with you for the first 24 hours to help you. Your team will tell you whether you go home the same day or stay one night in hospital. Keep the area clean and dry. Move your fingers gently to reduce swelling. If you feel unwell, contact us.

Recovery

In the first few days, you will notice swelling and stiffness in your hand or wrist. This is normal as your body heals from the surgery. We keep the area elevated and use ice packs to help reduce the swelling. You may feel some ache, which we manage with simple pain relief. The goal is to keep the area comfortable while it begins to mend.

You will wear a protective dressing or splint to keep the area still while it heals. We do not use hinged braces or abduction pillows for this procedure. Your hand therapist, Ruby Doolan at Extend Rehabilitation, will guide your exercises. She directs your therapy and makes any splint you need. You will start gentle movements early to prevent stiffness. These exercises are crucial for restoring grip strength and flexibility.

As the swelling settles, you will gradually return to daily tasks. You can resume light activities as comfort allows. Once your surgeon clears you to drive, you may return to the wheel. Remember, you must not drive while wearing a sling or splint, and you must be able to react quickly in an emergency. Your timeline may differ; your surgeon and therapist will guide you through each step of your recovery.

What can go wrong

Most patients do well, but problems can occasionally happen. Your surgeon and the team monitor you closely to spot any issue early.

The main risk with this condition is that the lump may come back. This is called recurrence. It typically happens within 36 months of your surgery. You might notice a new lump or swelling in the same spot as before. It could feel firm or tender when you touch it. If you see a return of symptoms, please let us know. We can check if the tissue has grown back.

Sometimes, the disease is more widespread. This is known as diffuse disease. It can be harder to remove completely. Because of this, the chance of it returning is higher. You may notice multiple small lumps or swelling that seems to spread across your hand or fingers. If you feel new lumps appearing in different areas, tell us at your next review. We will assess whether further treatment is needed.

In rare cases, the condition can appear in several places at once. This is called multifocal disease. You might find lumps on both sides of the same hand, or even in other parts of your body. If you notice new growths in unexpected places, bring them to our attention. We will examine them to see if they are related to the original issue.

Incomplete removal of the tissue is a common reason for the lump returning. If you feel that the area has not fully healed or if a lump persists, discuss this with us. We want to ensure the area is clear.

The complications table on this page lists typical rates if you want the specifics.

When to call us

Call us if you notice fever, increasing wound redness, or discharge. Seek emergency care for sudden severe pain, calf swelling, or shortness of breath. Contact your surgeon immediately if you experience loss of sensation or cannot move the limb. These signs need urgent assessment to ensure your recovery stays on track.

In more depth

This section goes further than you need for your own treatment decisions. Excision of a giant cell tumour of tendon sheath is worth the extra reading because the operation is technically straightforward and the problem is entirely elsewhere: the lump comes back in a meaningful minority of people, and most of what determines that is decided before the first incision.

THE OPERATION IS A COMPLETE EXCISION, NOT A DEBULKING

The tumour is benign and does not spread. What it does is extend – sending fronds around the tendon, into the joint capsule, and around the neurovascular bundles – so it is not a discrete ball that shells out. The principle of first-line treatment is **complete resection**, with the caveat that treatment is **never urgent** and the indication should be weighed against symptoms, progression, location and the patient's circumstances [1].

That last point deserves stating plainly, because it is easy to lose. This is a benign lump. An operation on it is elective in the fullest sense, and doing nothing is a legitimate option for a small, painless, slow-growing lesion.

RECURRENCE IS SUBSTANTIALLY A PROPERTY OF THE TUMOUR

The most useful framing for a patient asking “will it come back” is that the answer is only partly in the surgeon's hands. Across a systematic review of digital cases, the **intrinsic biology of the tumour appears to play a more fundamental role in recurrence than tumour location or local invasiveness** [2].

Recurrence after a well-performed excision is therefore recognised behaviour, not evidence that something was done wrong. It is worth saying before the operation rather than after.

BUT TWO DECISIONS DO CHANGE THE ODDS

Biology is not the whole story, and the modifiable part is where the evidence is most useful.

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** – and given relatively low complication rates and good functional outcomes, the authors recommend an **open approach with complete resection** where possible in higher-risk cases [3].

Set against 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 [4].

Reconciling the two: for a small, well-defined, localised lesion either approach can work; as size increases, and for the diffuse form, open complete excision is better supported. The mechanism is simply visibility – this tumour hides behind structures that have to be lifted and inspected directly, and what is not seen is not removed.

LOCALISED AND DIFFUSE ARE TWO DIFFERENT OPERATIONS

The distinction matters more than the shared name suggests. The **localised** form is the classic discrete nodule beside a finger tendon, and complete excision is realistic. The **diffuse** form – the same entity that is called pigmented villonodular synovitis when it fills a joint – carpets the synovium, and complete excision is often not achievable, which is why its recurrence rates are considerably higher [1].

Quoting a recurrence figure without saying which form it refers to is one of the commoner ways this condition is misrepresented, and knee figures for diffuse disease overstate the risk for a digital nodule considerably.

WHERE RADIOTHERAPY SITS

For diffuse disease that has recurred or cannot be fully 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 PVNS, while calling for large long-term prospective studies to confirm it [5].

For a digital localised tumour – the great majority of hand cases – this does not arise. It belongs to the diffuse, recurrent, joint-based end of the spectrum.

WHAT THE OPERATION RISKS, AND WHY

The specific risks follow from the anatomy the tumour occupies rather than from the tumour itself. Because it wraps around the digital nerves and vessels, **numbness along one border of the finger** is the characteristic complication of a thorough excision. Because it involves the tendon sheath, **stiffness** from adhesions is the other. And because complete removal is the aim, the dissection is necessarily more extensive than the visible lump implies – which is why the scar and the recovery are usually larger than patients expect from something described as a small benign nodule.

Reported complication rates in the larger series are relatively low [3], and open synovectomy has been shown effective for both localised and diffuse forms in the upper limb [6] – but the trade between completeness and collateral damage is real, and it is the reason the operation is worth doing properly once rather than repeatedly.

REFERENCES

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