

Flexor Tendon Sheath Ganglion

A flexor sheath ganglion: a small firm cyst at the base of the finger.

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What you're feeling

You may notice a soft lump on your wrist or hand. It often feels like a small water balloon under the skin. This swelling comes from fluid leaking from the joint into the tendon sheath. The lump might appear suddenly or grow slowly over time. In many cases, it does not hurt at first. However, as it enlarges, it can press on nearby nerves or tissues.

The pain is often dull and aching. You might feel it more when you move your wrist. Tasks that require forceful wrist extension can trigger discomfort. For example, pushing up from a chair, doing a press-up, or even leaning heavily on your hand while typing may become difficult. Some people find the pain worse at night. Others notice it is most prominent when they first wake up and their wrist feels stiff.

Your grip strength may feel weaker than usual. Simple actions like opening a jar, turning a key, or holding a heavy shopping bag might feel awkward or painful. The lump itself can restrict your range of motion. You might find it hard to fully bend or straighten your wrist. If the ganglion is near a nerve, you could experience tingling or numbness in your fingers.

It is common for the symptoms to come and go. The lump might shrink on its own, especially in children, where many resolve within 18 months. In adults, about 40% of wrist ganglions decrease in size over the first 6 years. However, for many, the swelling persists and causes ongoing irritation. If the lump becomes painful or limits your daily activities, it is worth discussing with your surgeon. They can help you understand whether watchful waiting or treatment is the right path for you.

What's actually happening

A ganglion cyst is a fluid-filled sac that forms near your joints or tendon sheaths. Think of it like a small water balloon that develops on the surface of a joint. The fluid inside is thick and jelly-like, similar to the lubricant that helps your tendons slide smoothly.

In your hand, this cyst often sits within the flexor tendon sheath. This is the protective tunnel that holds your finger tendons in place. When the cyst grows, it takes up space inside this tight tunnel. It can press against nearby structures, causing pain or stiffness. Sometimes, the pressure is enough to make your finger catch or lock, similar to a rope getting stuck in a pulley.

The exact cause is not always clear, but it often relates to wear and tear on the joint lining. Small amounts of joint fluid may leak out and form a sac. In some cases, the cyst connects directly to the joint space, allowing fluid to flow in and out. This connection explains why the cyst might change size over time.

While ganglions can occur in many places, including the wrist, elbow, and knee, the one affecting your flexor tendons is specific to your hand. It is a benign growth, meaning it is not cancerous. However, because it sits in a confined space, even a small cyst can cause significant discomfort or limit your movement.

Your surgeon will examine the area to confirm the diagnosis. They may use an ultrasound or MRI to see the cyst clearly. Understanding what is happening helps us choose the right treatment. Whether we recommend monitoring, aspiration, or surgery, the goal is to relieve the pressure and restore normal function to your tendons.

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. 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, including a physical examination and imaging where needed, establishes the diagnosis. For long-standing problems, we usually try non-operative care first. This includes changing your activities, seeing a physiotherapist or hand therapist, wearing a splint, or having an injection. We consider surgery when this approach has not given enough improvement.

Ganglions are fluid-filled sacs that can cause discomfort or limit movement. About 40% of wrist ganglion lesions decrease over the first 6 years after evaluation by a hand surgeon. In children with a wrist ganglion, if the cyst ultimately resolves, it usually does so within 18 months. Your surgeon may suggest simple self-care while you monitor the lump. Physiotherapy aims to keep your joints moving smoothly and reduce strain on the tendon sheath. If pain is present, over-the-counter pain medication or anti-inflammatories can help manage symptoms. These measures do not remove the cyst, but they can make daily life more comfortable while you wait for it to shrink or settle.

If conservative care does not relieve your symptoms, we discuss procedural options. Ganglion aspiration should be considered as a first-line intervention, with surgical excision remaining an effective option for symptomatic cases. Percutaneous puncture is a practical option for managing flexor tendon sheath ganglions due to low cost, lack of downtime, and low recurrence rate. No recurrences were observed after a second puncture in the cohort studied for percutaneous puncture of flexor sheath ganglions. However, most ganglions recur after aspiration. Surgical intervention for wrist ganglions has about a 10% recurrence rate. Open surgical excision offers a significantly lower chance of recurrence compared with aspiration in the treatment of wrist ganglions. We

present these options as a shared decision, weighing the likelihood of recurrence against the benefits of a procedure.

Surgery is considered when conservative care has reached its limit and the ganglion continues to cause pain, weakness, or functional limitation. The surgical option involves removing the cyst and its connection to the joint or tendon sheath to prevent fluid from re-accumulating. Operation-related complications after arthroscopic volar wrist ganglionectomy are associated with anatomical location distal to the bifurcation of the radial artery and concurrent penetration up to the superficial fascia layer. Surgical intervention for wrist ganglions leaves scars and carries some risk for adverse events. Your surgeon will discuss whether the potential benefits of removing the cyst outweigh these risks for your specific situation.

What to expect

A ganglion is a fluid-filled lump that often sits near a joint or tendon sheath. You might notice it appearing and disappearing over time. For wrist ganglions, about 40% shrink or disappear on their own within the first six years after you see a hand specialist. If yours is not causing pain or limiting your movement, your surgeon may suggest simply watching it.

If the lump causes discomfort or restricts your hand function, treatment options are available. Aspiration involves draining the fluid with a needle. While this is a low-cost option with little downtime, most ganglions return after this procedure. Surgical removal offers a significantly lower chance of the lump coming back compared to aspiration. For wrist ganglions, surgical recurrence is approximately 10%. This means that in about 9 out of 10 cases, the surgery resolves the issue long-term.

Recovery varies depending on the method chosen. After surgical excision, you can expect some scarring and a small risk of complications. Most patients notice a significant decrease in pain and an improvement in hand function within six weeks. If you have a job or hobby that requires forceful wrist extension, be aware that residual pain or functional limitations may persist after open dorsal wrist ganglion excision.

For flexor tendon sheath ganglions, percutaneous puncture is a practical option. It carries a low recurrence rate, and no recurrences were observed after a second puncture in some studies. Arthroscopic excision, which uses small cameras and instruments, also achieves recurrence rates similar to open surgery. This approach allows your surgeon to treat other underlying issues at the same time.

Ultimately, the outlook is generally positive. Whether you choose to wait, drain the cyst, or have it removed, your surgeon will help you weigh the benefits against the risks. The goal is to reduce pain and restore your normal activities.

When to see someone

See your GP if you notice a lump that causes persistent pain, weakness, or limits your movement. Ganglions can sometimes press on nearby nerves, causing numbness or tingling. If you experience sudden loss of sensation or colour changes in your hand, go to an emergency department immediately. This could signal a blood vessel

issue. Most ganglions are harmless and may shrink on their own over six years. However, if the swelling grows quickly, becomes very painful, or stops you from sleeping or working, ask for a specialist review. Do not attempt to drain it yourself.

In more depth

This section goes further than you need for your own treatment decisions. A flexor tendon sheath ganglion is worth the extra reading because it is the smallest lump in hand surgery that reliably causes disproportionate symptoms – and because what it is attached to determines both why it hurts and why simple treatments fail.

A PEA-SIZED LUMP THAT HURTS OUT OF PROPORTION

These cysts – also called retinacular cysts, or volar retinacular ganglia – arise from the fibrous sheath that holds the flexor tendons against the finger bones [1]. They sit at the base of the finger in the palm, are typically only a few millimetres across, and are firm rather than soft.

The symptom is characteristic and explains itself once the anatomy is clear: pain on gripping something hard and narrow – a steering wheel, a golf club, a bicycle handlebar, a shopping bag handle. The cyst is trapped between the object and the underlying bone, and there is no soft tissue to cushion it because the sheath is bound directly to the phalanx.

That is why size correlates so poorly with symptoms. A large soft swelling on the back of the wrist may be painless while a lesion a fraction of its size at the base of a finger is genuinely limiting.

THE SAME RULE AS EVERY OTHER GANGLION

Its behaviour follows from what it is connected to. The cyst arises from the tendon sheath and is filled from it, which means the mechanics are those of the wrist ganglion and the mucous cyst: the sac is the visible end of the problem, not the source.

Consequently, puncturing or aspirating it addresses the swelling and not the leak. Recurrence after simple drainage is common, and definitive treatment means excising the cyst together with the affected portion of the sheath from which it arises.

WHY THE OPERATION IS SMALLER THAN IT SOUNDS BUT NOT TRIVIAL

Excision is a short procedure through a small incision at the base of the finger, and it is generally curative. Two anatomical facts make care worthwhile at that site.

The digital nerves run immediately beside the flexor sheath, one on each side, and at the base of the finger they are superficial and close to the midline structures being removed. A numb patch along one border of a finger is a recognised risk of a small operation in this location.

Second, only the redundant portion of the sheath can be removed. The pulleys that hold the tendons against the bone are load-bearing structures, and losing a critical one allows the tendon to bowstring away from the

finger, which weakens grip. Excision is therefore deliberately limited to the segment of sheath that is not doing that job.

WHEN TO LEAVE IT ALONE

Because this lesion is benign and does not enlarge indefinitely, treatment is driven by symptoms alone. A cyst that is noticeable but not painful in daily grip needs nothing done. Where it is treated, it is because a specific and repeated activity is compromised – which is a clearer indication than most, since the provoking grip is usually easy for a person to identify.

The related cysts of the fingertip joint and the wrist are covered on their own pages; the shared principle across all three is that the stalk, not the sac, determines whether the problem returns.

REFERENCES

1. Foret AL, Chhabra AB. Volar retinacular ganglions. J Hand Surg Am. 2012;37(3):566-7.