

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 is a ganglion cyst, a fluid-filled sac that forms near a joint or tendon sheath. The lump might appear suddenly or grow slowly over time. In many cases, the cyst shrinks on its own. About 40% of wrist ganglions decrease in size within the first six years after you see your hand surgeon.

When the cyst is present, you might feel a dull ache or a sharp pain. The discomfort often worsens when you move your wrist or fingers. Tasks that require forceful wrist extension can be particularly difficult. You might find it hard to push open a heavy door, lift a kettle, or press down on a chopping board. If the cyst presses on nearby nerves, you may also feel tingling or weakness in your hand.

Pain can flare up after activity and settle down with rest. Some people notice the discomfort is worse at night or first thing in the morning. The lump itself may change size depending on how much you use your hand. It might look larger after a busy day and smaller after a period of rest.

If the cyst is located on the palm side of your wrist, it can press against the radial artery. This area is close to important nerves and blood vessels. You might feel a throbbing sensation or increased sensitivity in your thumb or fingers. Because of this, your surgeon will carefully examine the area to distinguish this condition from other issues like trigger finger or Dupuytren's nodule.

Most people seek treatment because the lump is painful or limits their daily tasks. While some cysts resolve without intervention, others persist and cause ongoing discomfort. Your surgeon will discuss whether simple drainage or surgical removal is the best path for your specific situation.

What's actually happening

A ganglion is a fluid-filled sac that forms near your joints or tendon sheaths. Think of it like a small water balloon that develops from the lining of your joint. This lining, called the synovium, produces lubricating fluid to help your tendons glide smoothly. Sometimes, this lining bulges out, creating a cyst.

In the case of a flexor tendon sheath ganglion, this sac forms along the path where your finger or thumb tendons run. The tendon is like a rope that allows you to bend and straighten your digits. The sheath is the protective tunnel surrounding that rope. When the ganglion grows inside or next to this tunnel, it takes up space.

This extra space can cause problems. The cyst may press on the tendon, making it difficult for the rope to slide freely. You might feel stiffness, pain, or a catching sensation when you move your hand. In some cases, the pressure can irritate nearby nerves, leading to tingling or weakness.

The exact reason these cysts form is not always clear. However, we know they are linked to wear and tear or minor stress on the joint. Patients with loose joints are more prone to developing them. The cyst often communicates with the joint, meaning fluid can move in and out, which is why they can change size.

While some ganglions shrink on their own over several years, others persist and cause discomfort. If the cyst becomes painful or limits your movement, treatment may be needed. Simple procedures like draining the fluid or removing the cyst surgically can resolve the issue. Your surgeon will discuss the best approach based on your specific symptoms and how the ganglion is affecting your daily life.

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. We begin by exploring conservative management strategies that can help reduce symptoms and improve hand function without immediate intervention.

Many ganglion cysts shrink or disappear on their own over time. Research shows that approximately 40% of wrist ganglion lesions decrease in size over the first 6 years after evaluation. For children, if a wrist ganglion resolves, it usually does so within 18 months. We often recommend a period of watchful waiting combined with activity modification to avoid irritating the cyst. Physiotherapy or hand therapy can be very helpful during this time. Our therapists focus on maintaining joint mobility and strengthening the surrounding muscles to support the area. Splinting may also be used to rest the joint and reduce pressure on the tendon sheath. This approach allows your body time to manage the fluid accumulation naturally while keeping your hand functional.

If conservative care does not provide enough relief, we consider medical interventions such as aspiration. This involves using a needle to drain the fluid from the cyst. Aspiration is a practical option for flexor tendon sheath ganglions because it has low cost and requires no downtime. However, most ganglions recur after aspiration alone. If the cyst returns, a second puncture may be attempted. In some cases, no recurrences were observed after a second puncture in studied cohorts. We do not use sclerosant injections (chemical agents that scar the

tissue) due to safety concerns, including the risk of serious blood vessel injury. Pain relief medications or anti-inflammatories may be suggested to manage discomfort while you decide on further steps.

Surgical excision is considered when symptoms persist, interfere with daily activities, or when aspiration has failed. Open surgical excision offers a significantly lower chance of recurrence compared with aspiration in the treatment of wrist ganglions. Surgical intervention for wrist ganglions has about a 10% recurrence rate. Arthroscopic excision achieves recurrence rates similar to open management but allows for simultaneous treatment of other joint issues. We discuss these options with you to ensure the choice aligns with your specific needs and lifestyle.

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 detailed physical 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

A ganglion is a fluid-filled lump that forms near a joint or tendon sheath. It is benign, meaning it is not cancer. The outlook varies depending on whether you choose treatment or wait. Without intervention, approximately 40% of wrist ganglions decrease in size over the first 6 years after evaluation by a hand surgeon. However, many persist or fluctuate in size. If you leave it alone, you may experience periods of discomfort or limited movement.

If you opt for treatment, your surgeon will discuss the most suitable approach for your specific case. Aspiration, where the fluid is drained with a needle, is often considered a first-line intervention. It is practical due to low cost and lack of downtime. However, most ganglions recur after aspiration. For those seeking a more permanent solution, surgical excision offers a significantly lower chance of recurrence compared with 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. Arthroscopic ganglion excision achieves recurrence rates similar to open management.

Recovery involves managing expectations for both procedure types. Patients experienced significant increases in function and decreases in pain within 6 weeks after arthroscopic ganglion cyst resection. Recurrence and complication rates after arthroscopic ganglion cyst resection appear to be comparable to open resections. Open excision of dorsal wrist ganglia leads to a lower recurrence rate than does arthroscopic excision. Be aware that surgical intervention for wrist ganglions leaves scars and carries some risk for adverse events.

Your surgeon will guide you through the process. We aim to provide clear information so you can make an informed decision. Our practice focuses on helping you regain comfort and function. We will monitor your progress closely. If symptoms persist or worsen, we will adjust your care plan. The goal is to help you return to your daily activities with minimal pain.

When to see someone

Ask for a specialist review if you notice persistent pain that does not improve with rest, or if your hand feels weak or unstable. Seek care if your joint locks or gives way, or if symptoms interfere with your sleep or work. Sudden worsening of symptoms also warrants a check-up. While many ganglions shrink over the first 6 years, treatment is advised if they cause significant discomfort. Your surgeon can help distinguish a ganglion from other conditions through a physical exam. Early assessment ensures you receive the right care to manage pain and maintain function.

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.