

## Wrist Ganglions

### Definition

Ganglions are benign fluid filled swellings. They are associated with joints and tendons.

### Causes

**Ganglions are an outpouching of the synovial lining of the joint.** A one-way valve allows fluid out of the joint but not back in. Injury or a weakness in the joint capsule has been proposed as a cause. Another theory is that surrounding tissue undergoes degeneration or produces mucin, the fluid within the cyst.

### Risk Factors

60% of swellings in the hand and wrist are ganglions. Age is a risk factor and women are 3x more likely to develop one.

### Symptoms

Dorsal wrist ganglions are the most common, especially in younger patients. **Volar wrist ganglions** are more common in older patients and are **often associated with osteoarthritis or tendinopathy.**

Symptoms of a dorsal wrist ganglion include:

- A round or ovoid swelling on the back of the wrist;
- It may fluctuate in size as the fluid inside increases and decreases;
- Forced wrist extension, such as push-ups and yoga, commonly exacerbates the pain;
- Exacerbations may cause aching and dysfunction for a period of hours, but can last 2 weeks.
- The **relationship between ganglions, pain and dysfunction is not understood**. Proven by a study that found **50% of people with no symptoms have ganglions on MRI**.

## Diagnosis

Ganglions are often diagnosed clinically. An x-ray can be performed but rarely changes management. **Ultrasound and MRI are equally good at confirming a ganglion**. Ultrasound is cheaper but operator dependent. **Confirming a ganglion may be necessary if it has concerning features**.

## Treatment

Observation is best if the ganglion is not painful or causing a functional problem. **Spontaneous resolution occurs in ~50% of patients**, but can take months or years.

**Nonoperative management is good for symptom control** and may decrease the number and length of exacerbations. It includes:

- Nonsteroidal **anti-inflammatories** (NSAIDs: Ibuprofen or similar). A topical NSAID may have less side effects;
- **Activity modification** and avoiding painful activities;
- **Splinting** (a short wrist splint from a pharmacy is often adequate);
- A **cortisone injection**.
- **Aspiration** of a wrist ganglion leads to **recurrence in  $\geq 70\%$** . This is not improved with injection of cortisone.

**Operative management includes arthroscopic and open excision.** Recurrence rates are higher with arthroscopy but is preferred by some surgeons as it is considered less invasive. **Open excision rates of recurrence range from 2% up to as high as 30%,** with lower rates expected in trained consultant hand surgeons.

Complications; The **most common complications are wrist stiffness and ongoing pain,** further evidence that we don't understand the link between ganglions and symptoms. Less common complications include scar tenderness, infection, nerve, ligament and tendon injury.

### **Prevention**

A healthy lifestyle is the best way to prevent arthritis including a balanced diet and regular exercise. This will reduce the chances of developing certain types of ganglions. Nonoperative management will improve pain and dysfunction when an exacerbation occurs. This may mean an operation can be avoided.

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