Ganglion Cyst: Causes, signs, Diagnosis and Treatment

A **ganglion cyst** is a benign, fluid-filled swelling that arises in relation to a **joint capsule**, **tendon sheath**, or **synovial sheath**, commonly presenting near the wrist or fingers. These cysts contain **gelatinous, mucinous fluid** and are often likened to a water balloon on a stalk.

Common Locations

- **Dorsal wrist** (most common site)
- **Volar (palmar) wrist**
- **Base of the fingers (palmar side)**
- **Dorsum of the distal interphalangeal (DIP) joint** — often associated with **mucous cysts** and **osteoarthritis**

? Pathogenesis

- **Cystic degeneration** of connective tissue around **tendons or joints**
- **Synovial fluid herniation** through weakened joint capsules or tendon sheaths
- **Coalescence of microcavities** within the synovial sheath, forming a visible cyst

Though the **exact etiology is unknown**, contributing factors include:

- **Repetitive trauma or irritation**
- **Joint or tendon overuse**
- **Degenerative joint disease (esp. in older adults with mucous cysts)**

? Clinical Features

- **Well-defined, round or oval swelling**
- **Smooth, cystic, or tensely cystic consistency**
- **Non-tender and fluctuant**
- **Transilluminant** (transmits light)
- **Mobile**, but **restricted when associated tendon is activated against resistance**
- May be **associated with pain, tenderness**, or **limited joint motion** in some cases

  ? **Paget's Test Positive**: Firm swelling becomes more prominent or tense with joint use or resistance.

? Differential Diagnosis

- **Lipoma** – soft, non-cystic, non-transilluminant
- **Lymphatic cyst** – may be soft and compressible
- **Sebaceous cyst** – has a punctum and thicker content
- **Bursa** – may appear near joints, often larger and softer
- **Sesamoid bone or exostosis** – hard, immobile, bony on palpation (small ganglia may

mimic these)

? Diagnosis

Primarily **clinical**, based on:

- **Typical location and characteristics**
- **Transillumination test**: cyst glows under light
- **Palpation**: soft to firm, well-localized mass

Imaging studies (when needed):

- **X-rays**: rule out bony pathologies like **arthritis or osteophytes**
- **Ultrasound**: confirms cystic nature; distinguishes from solid masses
- **MRI**: detects occult ganglia or complex cysts not visible clinically

? Treatment

? Conservative (First-Line)

- **Observation**: Indicated in **asymptomatic** cases due to high rate of spontaneous resolution
- **NSAIDs**: For pain control in symptomatic patients
- **Immobilization**: May reduce swelling by limiting activity (use sparingly)

? Minimally Invasive

- **Aspiration**:
  - Simple, office-based procedure
  - May be combined with corticosteroid injection
  - High recurrence (~50%)
- **Sclerotherapy**: Less commonly used; not as effective

? Surgical Excision

- Indicated for:
  - Persistent pain
  - Functional impairment
  - Cosmetic concerns
- Performed under **local anesthesia (2% lignocaine plain)**
- Important to excise:
  - Entire cyst
  - Stalk
  - Associated joint capsule if necessary
- **Recurrence rate**: ~30%
- **Post-op care**:
  - Apply **firm crepe bandage** for up to **4 weeks**
  - Rest and limited joint movement
  - Always **send the specimen for histopathology**

? Prognosis

- Benign and **non-cancerous**
- High recurrence, especially with non-surgical management
- Surgical removal reduces recurrence risk but does not eliminate it completely

? High Yield points

- Ganglion cysts **transilluminate**, unlike solid masses
- **Observation is first-line** for asymptomatic cases
- **Aspiration is useful** but has a **high recurrence rate**
- **Surgical excision is definitive**, especially for recurrent or symptomatic cysts
- **Mucous cysts** over DIP joints are linked with **osteoarthritis**
- Always assess **joint mobility and nerve compression symptoms**, especially with large cysts