CONDITION

Baker cyst

Learn how a Baker cyst causes swelling behind the knee, what conditions can trigger it, how it is diagnosed, and when leg symptoms need urgent care.

WHAT IT IS
Fluid-filled swelling behind the knee

BODY SYSTEM
Bones and joints

MAIN SYMPTOMS
Lump behind knee, tightness, aching, reduced knee movement

WHAT CAUSES IT
Knee injury or joint inflammation

HOW IT IS DIAGNOSED
Clinical examination and ultrasound

MAIN TREATMENT
Observation and underlying knee treatment

CAN IT BE CURED?
Sometimes - may shrink but can recur

IS IT AN EMERGENCY?
Sometimes - sudden calf pain or swelling

LONG-TERM OUTLOOK
Often improves but may recur

Overview

A Baker cyst is a fluid-filled swelling behind the knee. It is also called a popliteal cyst. The fluid is synovial fluid, which normally lubricates the inside of a joint.

The cyst often develops when a knee problem causes the joint to make extra fluid. Pressure within the knee can push this fluid into a small tissue sac at the back of the joint. The opening may act like a one-way valve, allowing fluid to collect and form a lump.

A Baker cyst is not cancer. Some cysts are small and cause no symptoms. Others create tightness, pain, or difficulty bending the knee. The cyst may become more noticeable when the knee is straight and may feel softer or smaller when the knee is bent.

In adults, a Baker cyst commonly reflects another problem inside the knee, such as

osteoarthritis, inflammatory arthritis, or a cartilage injury. Treating that underlying problem is often more important than treating the cyst alone.

Children can also develop Baker cysts. In children, the cyst may occur without another knee disorder and often improves over time. A child with persistent pain, unusual swelling, an injury, or difficulty walking should still be assessed by a healthcare professional.

A Baker cyst can occasionally leak or rupture. The released fluid may cause sudden calf pain and swelling. These symptoms can look similar to a blood clot in a deep leg vein, so new calf swelling should not be assumed to be from a known cyst.

Symptoms

A Baker cyst may not cause any symptoms. A person may first notice it during an examination or imaging test performed for another knee problem.

When symptoms occur, they may include:

The size of the swelling can change. It may become larger when inflammation inside the knee increases and smaller when that inflammation settles. The cyst itself is not always the main source of pain. Arthritis, a meniscus injury, or another joint problem may be responsible for much of the discomfort.

If a cyst leaks or ruptures, fluid can move down into the calf. This may cause sudden pain, swelling, warmth, redness, or a feeling that water is running down the leg. Similar symptoms can occur with deep vein thrombosis, or DVT, which is a blood clot in a deep vein. A medical examination and often an ultrasound are needed to tell the difference.

- A smooth or firm lump behind the knee
- Tightness or pressure at the back of the knee
- Aching behind the knee or in the upper calf
- Stiffness or reduced ability to fully bend or straighten the knee
- Swelling that becomes more noticeable after standing or physical activity
- Clicking, locking, or giving way caused by the underlying knee condition

Causes and risk factors

The knee contains synovial fluid that reduces friction as the joint moves. Injury or inflammation can lead to extra fluid production and increased pressure inside the joint. Fluid may then enter

a nearby sac between muscles and tendons at the back of the knee, forming a Baker cyst.

In adults, associated knee conditions include:

Baker cysts are more likely when the underlying knee condition remains active. For example, continuing joint inflammation may refill a cyst after fluid has been removed.

Age can affect the likely cause. In adults, especially middle-aged and older adults, arthritis and degenerative cartilage changes are common contributors. In younger adults, a sports injury or meniscus tear may be involved. In children, the cyst may form without clear damage inside the knee.

A lump behind the knee is not always a Baker cyst. Other possible causes include an enlarged blood vessel, a blood clot, a solid growth, or another type of soft-tissue swelling. A clinician should assess a new or changing lump rather than relying only on its appearance.

- Osteoarthritis, which is the gradual breakdown of joint cartilage
- Rheumatoid arthritis and other inflammatory joint diseases
- A torn meniscus, the rubbery cartilage that cushions the knee
- Injuries to cartilage, ligaments, or other structures within the knee
- Inflammation of the joint lining, called synovitis

Diagnosis

Diagnosis begins with questions about the swelling, pain, activity, previous injuries, and history of arthritis or other joint disease. The clinician may ask whether the lump changes when the knee bends and whether symptoms appeared gradually or suddenly.

During the examination, the clinician may inspect and feel the back of the knee, compare both legs, and check the knee's range of motion. The examination may also look for joint swelling, tenderness, instability, or signs of a meniscus or ligament injury.

Imaging is not always necessary when the examination is typical and symptoms are mild. It may be recommended when the diagnosis is uncertain, symptoms are significant, or another knee problem needs to be identified.

Tests may include:

Blood tests are not used to confirm a Baker cyst. They may sometimes help investigate infection, gout, rheumatoid arthritis, or another inflammatory condition.

A clinician may need to rule out DVT when there is new calf swelling, redness, warmth, or tenderness. Symptoms alone cannot reliably separate a ruptured Baker cyst from a blood clot.

- Ultrasound: This uses sound waves to show whether a lump contains fluid. It can also help evaluate the veins when a blood clot is a concern.
- X-ray: A Baker cyst does not usually appear clearly on an X-ray, but the test can show osteoarthritis, bone changes, or another joint problem.
- MRI: Magnetic resonance imaging provides detailed pictures of cartilage, menisci, ligaments, and other soft tissues. It may be used when an internal knee injury is suspected or when surgery is being considered.

Treatment and management

Treatment depends on the level of discomfort and the cause of excess fluid within the knee. A painless cyst may only need observation. Many cysts become smaller when the underlying knee inflammation improves.

For mild symptoms, a clinician may suggest temporarily reducing activities that increase pain or swelling. Lower-impact movement may place less stress on the knee than running, jumping, deep squatting, or repeated kneeling. Complete inactivity is not usually necessary unless a clinician recommends it.

Cold packs may help with pain and swelling. Wrap the pack in cloth rather than placing it directly on the skin. Elevating the leg after activity may also be useful.

Nonprescription pain relievers may help some people. These medicines are not suitable for everyone and can interact with other medicines or health conditions. Follow the product label and ask a clinician or pharmacist which option is appropriate, particularly if you take blood thinners or have kidney, stomach, heart, or liver problems.

Physical therapy may focus on maintaining knee movement and strengthening the muscles that support the joint. A therapist can help adjust activities and select exercises that do not place unnecessary pressure on the painful area. Exercise does not directly drain the cyst, but better joint function may reduce symptoms linked to the underlying condition.

Treatment of the knee problem may include management of arthritis, inflammation, or an injury. The specific approach depends on the diagnosis. For example, care for osteoarthritis differs from treatment for rheumatoid arthritis or a meniscus tear.

If the cyst is large or painful, a clinician may use a needle to remove fluid. This procedure is called aspiration and is often guided by ultrasound. A corticosteroid injection into the knee or cyst may sometimes be used to reduce inflammation. These procedures can ease symptoms, but the cyst may return if the knee continues to produce extra fluid.

Surgery is rarely needed solely to remove a Baker cyst. Removing the cyst without addressing

the cause can lead to recurrence. When persistent symptoms are linked to a treatable problem inside the knee, arthroscopic surgery may be considered. Arthroscopy uses a small camera and instruments inserted through small cuts to treat problems such as certain meniscus tears.

Open surgery to remove the cyst may occasionally be considered if it remains large, painful, or compresses nearby nerves or blood vessels despite other treatment. Decisions about procedures should be based on symptoms, examination findings, imaging, overall health, and the expected benefits and risks.

Do not attempt to puncture or drain a cyst at home. This can cause bleeding, infection, or injury to nearby structures.

Complications

The most common ongoing issue is recurrence. A cyst may refill after aspiration or surgery when the underlying knee condition continues to produce excess fluid.

A cyst can rupture and release fluid into the calf. The body often absorbs this fluid over time, but the resulting pain and swelling may be substantial. Because these symptoms overlap with those of DVT, urgent assessment may be needed.

A very large cyst can occasionally press on nearby nerves or blood vessels. This may cause numbness, weakness, increasing swelling, or changes in circulation below the knee. These complications are uncommon but require prompt medical review.

Reduced knee movement may also affect walking, work, exercise, or sleep. Long-term limitations are often related to the underlying arthritis or injury rather than the cyst alone.

Follow up

Arrange routine follow-up if the lump persists, grows, returns after treatment, or limits knee movement. Review is also appropriate if pain continues despite activity changes or if there are symptoms such as locking, repeated giving way, or ongoing joint swelling. These features may point to a knee condition that needs further evaluation.

Seek urgent medical care for new or rapidly increasing calf swelling, warmth, redness, or pain. A ruptured cyst and a blood clot can look alike, and testing may be needed. A hot, very painful, swollen knee accompanied by fever or feeling unwell also needs urgent assessment because joint infection is one possible cause.

Call emergency services for sudden difficulty breathing, chest pain, fainting, or coughing up

blood. These can be signs that a blood clot has traveled to the lungs.

After aspiration, injection, or surgery, follow the care team's instructions about wound care, activity, rehabilitation, and warning signs. Report increasing redness, drainage, fever, worsening pain, or new numbness promptly.

Sources

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