CONDITION

Toxic synovitis

Toxic synovitis is temporary inflammation inside a child's hip that causes pain and limping

WHAT IT IS
Temporary inflammation of the lining inside a child's hip

BODY SYSTEM
Bones, joints and muscles

MAIN SYMPTOMS
Hip or groin pain, limp, reduced movement, refusing to walk

WHAT CAUSES IT
Unknown, often following a viral illness

HOW IT IS DIAGNOSED
Clinical assessment after tests exclude joint infection

MAIN TREATMENT
Rest, pain relief and medical observation

CAN IT BE CURED?
Yes - usually resolves without lasting damage

IS IT AN EMERGENCY?
Sometimes - fever with severe pain needs urgent assessment

LONG-TERM OUTLOOK
Full recovery is usual, although episodes can return

Overview

Toxic synovitis is temporary inflammation of the synovium, the thin lining inside a joint. It usually affects the hip in children. Doctors often use the term "transient synovitis" because the inflammation normally lasts for a short time.

Despite its name, toxic synovitis is not caused by poison or a toxin. It is also not the same as an infection inside the joint.

The condition can cause hip or groin pain, a limp, or refusal to walk. A child may complain of thigh or knee pain instead because pain from the hip can be felt lower down the leg. One hip is usually affected, although both can be involved.

Toxic synovitis is most often seen in children between about 3 and 8 years old, but it can occur outside this age range. Most children begin to improve within a few days and recover fully

within one or two weeks.

The main concern is that several more serious conditions can cause similar symptoms. In particular, septic arthritis-an infection inside a joint-needs urgent treatment. Toxic synovitis should therefore be considered only after a healthcare professional has assessed the child and found no evidence of a more serious cause.

Symptoms

Symptoms often start suddenly. A child may wake with pain or begin limping during the day, sometimes without any clear injury.

Typical features include:

The child may hold the affected leg slightly bent and turned outward because this can feel more comfortable.

Children with toxic synovitis are usually otherwise reasonably well. They may have had a recent cold, sore throat, diarrhoea or another viral illness. A mild temperature can occur, but a clear fever, worsening pain or an unwell appearance raises more concern about infection or another condition.

Young children may not be able to describe where the pain is. Signs can include crawling instead of walking, crying during nappy changes, resisting movement of one leg or becoming unusually reluctant to play.

- Pain in the hip, groin, thigh or knee
- Limping or walking on the toes of the affected leg
- Refusing or being unable to put full weight on the leg
- Reduced hip movement, especially when the leg is turned
- Discomfort after resting or on first getting out of bed

Causes and risk factors

The exact cause is unknown. In many children, symptoms begin during or shortly after a viral infection. The immune system's response to that infection may temporarily inflame the hip lining, but a virus is not usually found inside the joint.

Some episodes follow a minor injury or unusually vigorous activity. These events may draw attention to the hip rather than directly causing the inflammation.

Toxic synovitis is not considered contagious. A child cannot pass the joint inflammation to another person, although a preceding viral infection may have been contagious.

It is not usually caused by an inherited problem. Having one episode can increase the chance of another episode, but most children do not develop an ongoing joint condition.

Diagnosis

There is no single test that confirms toxic synovitis. It is a clinical diagnosis, meaning it is identified from the pattern of symptoms, an examination and the exclusion of other important causes.

A healthcare professional will ask when the symptoms began, whether there was an injury or recent illness, and whether the child can stand or walk. They will examine the hips, knees and the rest of the legs. They may also check the abdomen, spine and skin because problems in these areas can sometimes cause a limp.

If symptoms are mild, the child is otherwise well and the examination fits toxic synovitis, tests may not always be necessary. Follow-up is still important to make sure the symptoms improve as expected.

When infection, injury or another condition is possible, assessment may include:

An ultrasound can show extra joint fluid, but it cannot reliably tell whether that fluid is caused by toxic synovitis or infection.

If septic arthritis is suspected, a specialist may remove joint fluid with a needle. The fluid can be examined and cultured to look for bacteria. This procedure is not routinely needed for a child whose symptoms and examination are reassuring.

Other possible causes of limping include a fracture, bone or joint infection, Perthes disease, slipped upper femoral epiphysis and inflammatory arthritis. Which conditions need to be considered depends partly on the child's age, examination and symptoms.

- Blood tests for signs of inflammation or infection
- An ultrasound scan to look for fluid inside the hip
- An X-ray to check bones and look for other causes of pain
- MRI in selected cases when symptoms remain unexplained

Treatment and management

Treatment focuses on comfort and allowing the inflammation to settle. Most children can be cared for at home after they have been medically assessed.

Rest is important during the painful stage. The child should not be forced to walk or exercise through pain. Quiet activities are suitable until walking becomes comfortable.

A healthcare professional may recommend an anti-inflammatory medicine, such as ibuprofen, if it is appropriate for the child. Paracetamol, also called acetaminophen, may be used for pain relief. Follow the product instructions or advice given by a healthcare professional, as suitability depends on the child's age, health and other medicines.

Crutches may occasionally help an older child who is uncomfortable putting weight on the leg. Most young children simply limit their own activity.

Antibiotics like amoxicillin or doxycycline do not treat toxic synovitis because it is not a bacterial infection. Antibiotics are needed if testing instead shows septic arthritis or another bacterial infection.

As pain improves, the child can gradually return to normal walking. Running, jumping and sports should wait until the child can walk and move the hip without pain. There is usually no need for formal physiotherapy after an uncomplicated episode.

Complications

Toxic synovitis itself rarely causes lasting problems. The hip usually returns to normal without damage to the joint or effects on growth.

Symptoms can return, sometimes months or years after the first episode. A repeated limp still needs assessment rather than being assumed to be another episode, especially if there is fever, night pain, swelling or poor general health.

The most important risk is mistaking another condition for toxic synovitis. Septic arthritis can damage a joint if treatment is delayed. Persistent or recurring symptoms may also be due to a bone, hip or inflammatory condition that was not apparent at the first assessment.

Seek another medical review if the child does not begin to improve as expected. A diagnosis may need to be reconsidered when pain continues beyond one or two weeks, becomes worse, or repeatedly returns.

Prevention

Toxic synovitis cannot reliably be prevented because its exact cause is unknown. It is not

usually linked to a problem with diet, parenting, exercise or the way a child walks.

Ordinary steps that reduce the spread of viral infections, such as handwashing and covering coughs, are sensible for general health. They cannot guarantee that toxic synovitis will not occur.

After recovery, restricting normal play or sport does not appear necessary. A gradual return once the child is pain-free is usually appropriate.

Living with it and what to expect

Pain often begins to ease after a short period of rest and appropriate pain relief. Many children show clear improvement within two or three days. Complete recovery commonly takes up to one or two weeks, although no exact timeline can be promised.

During recovery, activity may change from day to day. A child might walk comfortably at home but limp after being more active. Overall improvement matters more than small short-term changes.

Keep the child home from school or childcare while walking is painful or normal activities cannot be managed safely. Return is reasonable when the child is comfortable, mobile and well enough to participate. Sports and strenuous play should wait until the limp and pain have gone.

Toxic synovitis does not usually become chronic, and most children have no limits on future activity. Some have another episode. A returning limp should be assessed because symptoms that look similar can have different causes.

Follow-up may be brief if symptoms resolve completely. A clinician may arrange another examination when the original diagnosis was uncertain, symptoms were more severe, or improvement is slower than expected.

When to get medical help

A new unexplained limp or refusal to walk should be medically assessed, particularly in a young child who cannot explain the pain. Do not assume that hip, thigh or knee pain is toxic synovitis without an evaluation.

Seek urgent same-day medical care if the child:

Go to an emergency department promptly if the child is very unwell, unusually sleepy or difficult to wake, or has severe pain with fever and cannot move the leg. These features may indicate a joint or bone infection that needs urgent treatment.

Arrange routine follow-up if symptoms are not clearly improving after two or three days, have not resolved within one or two weeks, or return after recovery. Earlier review is appropriate whenever the course differs from the plan given at the first assessment.

- Has a fever with hip or leg pain
- Cannot stand or put any weight on the leg
- Has severe or rapidly worsening pain
- Has a swollen, red or unusually warm joint
- Recently had a significant fall or injury
- Has pain that wakes them repeatedly at night
- Appears generally unwell

Common questions

Is toxic synovitis actually toxic?

No. The name is misleading. It does not mean that a poison or harmful chemical is present. "Transient synovitis" is a clearer term for the temporary inflammation inside the hip.

Can toxic synovitis cause a fever?

A child may have a mild temperature, especially after a recent viral illness. A definite fever combined with severe pain, refusal to walk or an unwell appearance needs urgent assessment because joint infection can look similar.

How long does toxic synovitis last?

Many children improve within two or three days and recover within one or two weeks. Symptoms that worsen, fail to improve or continue beyond this period need another medical review.

Can my child go to school with toxic synovitis?

School or childcare may be difficult while walking is painful. A child can usually return when they feel well, can move around safely and no longer need frequent rest because of pain. Strenuous physical activity should wait until walking is pain-free.

Can toxic synovitis come back?

Yes. Some children have another episode. Because several conditions can cause a limp, returning symptoms should still be assessed rather than treated automatically as toxic synovitis.

Is toxic synovitis the same as septic arthritis?

No. Toxic synovitis is temporary inflammation without a bacterial joint infection. Septic arthritis is an infection inside the joint and requires urgent hospital treatment. Fever, severe pain, inability to bear weight and appearing unwell make infection more concerning, but medical assessment and testing may be needed to tell them apart.

Sources

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