CONDITION

Cat-scratch disease

Learn how cat-scratch disease spreads, what symptoms it can cause, how it is diagnosed, and when treatment or urgent medical care may be needed.

WHAT IT IS
Bacterial infection linked to cat scratches or bites

BODY SYSTEM
Immune system

MAIN SYMPTOMS
Swollen lymph nodes, skin bump, mild fever, tiredness

WHAT CAUSES IT
Bartonella henselae infection

HOW IT IS DIAGNOSED
Antibody blood tests, PCR testing

MAIN TREATMENT
Supportive care, sometimes antibiotics

CAN IT BE CURED?
Yes, most recover without lasting problems

IS IT AN EMERGENCY?
Sometimes, seizures or severe confusion

LONG-TERM OUTLOOK
Most recover without lasting problems

Overview

Cat-scratch disease is an infection caused by the bacterium Bartonella henselae . It is usually linked to a scratch or bite from a cat, especially a kitten. Infection can also occur if an infected cat licks broken skin or the area around the eyes.

The bacteria commonly circulate among cats through fleas. Cats carrying B. henselae often appear healthy, so it is not possible to tell whether a cat is carrying the bacteria by looking at it.

In people, the infection most often causes a small bump near the scratch or bite followed by swollen lymph nodes. Lymph nodes are small parts of the immune system that help filter germs. The affected nodes are usually near the original injury, such as in the armpit after a scratch on the hand or arm.

Most otherwise healthy people recover without lasting problems. However, swollen lymph nodes may remain enlarged for weeks or sometimes months. A small number of people develop infection in the eyes, liver, spleen, nervous system, bones, or heart. Serious illness is more likely in people whose immune systems are weakened.

Cat-scratch disease is not usually spread from one person to another. Having had the infection does not mean that every future cat scratch will cause it.

Symptoms

A small red or brown bump, blister, or crust may form where the skin was scratched, bitten, or licked. It may be mistaken for an insect bite. This skin change is often mild and may appear before the person feels ill.

Swollen lymph nodes are the most typical symptom. They may be tender, warm, or painful. The skin over a node may become red. In some cases, a node fills with pus, which is called suppuration.

Other possible symptoms include:

Symptoms usually develop within days to a few weeks after contact with a cat, although the exact timing varies. The lymph nodes may enlarge gradually, and the original scratch may have healed by the time swelling is noticed.

Less common symptoms depend on which part of the body is affected. Infection near an eye can cause redness, swelling, pain, light sensitivity, or nearby swollen lymph nodes. Inflammation of the retina or optic nerve can cause blurred vision or other visual changes. Liver or spleen involvement may cause prolonged fever or abdominal pain. Nervous system involvement may cause severe headache, confusion, weakness, or seizures.

These less common symptoms can also have many other causes. A medical assessment is needed rather than assuming they are due to cat-scratch disease.

- A mild fever
- Tiredness or a general feeling of being unwell
- Headache
- Reduced appetite
- Muscle or joint aches

Causes and risk factors

Cat-scratch disease develops when B. henselae enters the body through broken skin or, less often, tissue around the eye. A cat scratch may be contaminated with flea dirt, which is flea waste containing the bacteria. Bites and licking of an open wound can also provide a route of entry.

Kittens and young cats are more likely than older cats to carry B. henselae . Cats that have fleas, spend time outdoors, or interact with other cats may have more opportunities to become infected. A cat does not need to appear sick to carry the bacteria.

Factors that may increase the chance of infection or complications include:

People do not generally need to avoid cats. Preventive steps include washing hands after handling cats, avoiding rough play, keeping cats' nails trimmed, and cleaning scratches or bites with soap and running water. Cat owners should work with a veterinarian on year-round flea control appropriate for the animal. Applying flea products intended for dogs to cats can be dangerous.

Declawing is not recommended as a way to prevent cat-scratch disease. Routine testing or antibiotic treatment of a healthy cat is also generally not useful because infection in cats may come and go, and a positive test does not prove that the cat caused a person's illness.

- Rough play that leads to scratches or bites
- Allowing a cat to lick an open cut, wound, or the face
- Not washing a scratch or bite promptly
- Frequent exposure to kittens or flea-infested cats
- A weakened immune system, such as from advanced HIV infection, cancer treatment, an organ transplant, or certain immune-suppressing medicines

Diagnosis

There is no single test that confirms every case. A clinician usually begins by asking about symptoms, recent cat contact, scratches or bites, and the timing and location of swollen lymph nodes. They may examine the skin, lymph nodes, eyes, abdomen, and other areas based on the symptoms.

Blood tests can look for antibodies, which are proteins the immune system makes in response to B. henselae . These tests may support the diagnosis, but the results are not always clear. Antibodies can remain after an older infection, and some people with an active infection may not have a positive result early in the illness. The test can also react to related bacteria.

Polymerase chain reaction, or PCR, testing looks for bacterial genetic material. It may be performed on fluid from a swollen node or on tissue, particularly when the diagnosis is uncertain. A negative PCR result does not completely rule out the infection. Growing B. henselae in a laboratory culture is difficult and can take time, so routine culture is not usually the main diagnostic method.

Imaging, such as ultrasound or a CT scan, may be considered when a node may contain pus or when symptoms suggest involvement of the liver, spleen, bone, or another organ.

A lymph node biopsy is not needed in most typical cases. It may be considered when swelling is unusual, continues without a clear explanation, or could be due to another condition. Other possible causes include different infections, medication reactions, inflammatory diseases, and, less commonly, cancer.

Treatment and management

Most uncomplicated cases in people with healthy immune systems improve without antibiotic treatment. Care often focuses on comfort while the immune system clears the infection. Rest, fluids, and nonprescription pain or fever medicine may help. A clinician or pharmacist can advise whether a particular medicine is safe based on age, pregnancy, other health conditions, and current medicines.

Swollen lymph nodes can take much longer to return to normal than fever or tiredness. A node that is slowly becoming smaller may not mean that the infection is still active.

Antibiotics like amoxicillin or doxycycline are not routinely needed for every person. In some uncomplicated cases, a clinician may consider azithromycin because limited evidence suggests that it can reduce lymph-node size more quickly. The decision depends on the symptoms, test findings, immune status, and possible medicine risks. Antibiotics should not be taken from another person or left over from an earlier illness.

People with eye, nervous system, bone, liver, spleen, or heart involvement may need a different antibiotic plan and a longer course of treatment. Treatment for people with weakened immune systems also differs from treatment for typical lymph-node disease. An infectious disease specialist, eye specialist, neurologist, or heart specialist may be involved. Some forms of severe Bartonella infection require more than one antibiotic, but the exact choice should be individualized by the treating team.

If a swollen lymph node becomes very painful and contains pus, a clinician may remove fluid with a needle to relieve pressure or obtain a sample. Cutting the node open is generally avoided when possible because drainage may continue through the skin for a prolonged

period.

The cat usually does not need to be removed from the home. Avoiding scratches and bites, treating fleas, and keeping the cat indoors may reduce future exposure. A veterinarian should evaluate a cat that appears ill or has a significant flea problem.

Complications

Complications are uncommon in otherwise healthy people, but they are important to recognize. Possible complications include:

Some complications can occur without obvious swollen lymph nodes. Persistent fever, unexplained weight loss, abdominal pain, new visual symptoms, or neurologic changes deserve medical assessment.

- Eye inflammation, including infection around the eye or inflammation affecting the retina or optic nerve
- Infection involving the liver or spleen
- Encephalopathy, meaning inflammation or altered function of the brain
- Infection of bone, called osteomyelitis
- Endocarditis, an infection of the inner lining or valves of the heart
- Bacillary angiomatosis, which causes blood-vessel growths in the skin or internal organs and occurs mainly in people with severe immune suppression

Follow up

Routine follow-up may be recommended to confirm that fever has settled and lymph nodes are gradually becoming smaller. Contact a clinician if a node continues to enlarge, becomes increasingly painful, drains fluid, or does not improve as expected. Follow-up is also appropriate if symptoms return after initial improvement or if the diagnosis remains uncertain.

People with a weakened immune system should seek medical advice promptly after developing possible symptoms. They may need earlier testing, closer monitoring, or specialist care.

Arrange an urgent medical assessment for eye pain, significant eye redness, new blurred vision, persistent fever with worsening illness, severe abdominal pain, or a severe headache. A hot, rapidly worsening area of redness around a bite or scratch may indicate a different skin

infection and also needs prompt evaluation.

Seek emergency care for:

These symptoms are not specific to cat-scratch disease, but they can indicate a serious problem that should not wait for routine follow-up.

- A seizure, severe confusion, or difficulty waking
- Sudden weakness, trouble speaking, or loss of coordination
- Sudden or major loss of vision
- Trouble breathing, fainting, or severe chest pain

Sources

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