CONDITION

Visceral larva migrans

Visceral larva migrans is inflammation caused by animal roundworm larvae moving through internal organs.

WHAT IT IS
Parasitic larvae migrating through internal organs

BODY SYSTEM
Liver, lungs, heart, brain, and immune system

MAIN SYMPTOMS
Fever, cough, abdominal pain, tiredness

WHAT CAUSES IT
Infection with dog or cat roundworm larvae

HOW IT IS DIAGNOSED
Blood antibody testing; rarely tissue biopsy

MAIN TREATMENT
Antiparasitic medicines, sometimes corticosteroids

CAN IT BE CURED?
Sometimes - larvae can be killed, but damage may persist

IS IT AN EMERGENCY?
Sometimes - severe breathing, confusion, seizures, or sudden vision loss

LONG-TERM OUTLOOK
Most recover; severe organ or eye damage may persist

Overview

Visceral larva migrans is a form of toxocariasis. It happens when microscopic roundworm larvae move through internal organs and trigger inflammation. The liver and lungs are affected most often, but the heart, brain, or other tissues can also be involved.

The usual causes are Toxocara canis , a roundworm of dogs, and Toxocara cati , a roundworm of cats. Adult worms live in the intestines of these animals and produce eggs that pass into the environment in feces.

People are not the worms' normal host. After someone swallows an infective egg, larvae hatch in the intestine and travel through the body. They cannot grow into adult worms in a person. Symptoms come mainly from the immune system reacting to the larvae.

Many infections cause no symptoms. Visceral larva migrans refers to infection that produces symptoms or organ inflammation. It is most often recognized in young children, although people of any age can be affected.

Symptoms

Symptoms may begin gradually. They depend on how many larvae are present, which organs they reach, and how strongly the immune system reacts.

Common symptoms include:

Blood tests often show a high eosinophil count. Eosinophils are white blood cells involved in allergic reactions and responses to some parasites. A raised count does not prove that toxocariasis is the cause.

More serious symptoms are uncommon but can occur if inflammation affects the heart, brain, or nervous system. These may include chest pain, severe weakness, confusion, seizures, or problems with balance and movement.

A related form called ocular larva migrans affects the eye, usually one eye. It may cause blurred vision, floating spots, eye pain, or loss of vision. Eye involvement can occur without the fever, liver symptoms, or high eosinophil count seen in visceral infection.

- Fever
- Tiredness or reduced appetite
- Abdominal discomfort or pain
- Cough, wheezing, or shortness of breath
- An enlarged or tender liver
- Itchy rash

Causes and risk factors

Infection usually happens after swallowing mature Toxocara eggs from contaminated soil, sand, food, or hands. The eggs need time in the environment to become infective, so freshly passed animal feces are not usually an immediate source. Prompt disposal still helps prevent contamination.

Young children have a higher risk because they often play on the ground and may put dirty hands or objects in their mouths. Pica, which means repeatedly eating non-food items such as

soil or clay, increases the risk.

Other risk factors include:

You cannot catch visceral larva migrans through ordinary contact with an infected person. Humans do not develop adult Toxocara worms and do not pass the eggs in their stool.

- Playing or working in soil contaminated by dog or cat feces
- Using uncovered sandboxes
- Living around puppies or kittens that have not received appropriate veterinary care
- Eating unwashed produce contaminated with soil
- Eating raw or undercooked meat or organs from animals carrying larvae

Diagnosis

There is no single routine test that proves every case. Diagnosis combines your symptoms, possible exposure, examination findings, blood results, and antibody testing.

A complete blood count may show increased eosinophils. Other tests may show inflammation or changes in liver function, but these findings can have many causes.

A blood antibody test looks for an immune response to Toxocara . A positive result supports the diagnosis when symptoms and exposure fit. However, antibodies may remain after an older infection and can sometimes react to other parasites. The result does not show exactly where larvae are located.

Ultrasound, X-rays, CT scans, or MRI may be used to look for inflammation in affected organs. These scans can support the diagnosis and help rule out other conditions, but their findings are not specific to visceral larva migrans.

A tissue biopsy can occasionally identify a larva or the inflammation around it. This is rarely needed because larvae are small, scattered, and difficult to find.

A stool test does not diagnose human toxocariasis. The larvae do not mature into egg-producing adult worms inside people, so Toxocara eggs are not passed in human stool.

Treatment and management

Treatment is based on the severity of symptoms and which organs are involved. A mild infection without organ damage may improve as the larvae die and the inflammation settles. In some situations, monitoring rather than immediate medicine may be appropriate.

Symptomatic visceral larva migrans is usually treated with an antiparasitic medicine such as albendazole or mebendazole. These medicines act against the larvae. The choice and length of treatment need to account for the organs affected, other health conditions, and possible medicine side effects.

Corticosteroids like prednisone or hydrocortisone may be used when the immune response is causing significant inflammation. These medicines reduce inflammation; they do not kill the parasite. They are more likely to be considered when the lungs, heart, brain, or eyes are involved.

Eye symptoms require assessment by an eye specialist. Treatment may focus on controlling inflammation and protecting vision. Some people need eye procedures as well as medicines.

Follow-up can include a review of symptoms, repeat eosinophil counts, and checks of the affected organs. Antibody levels may stay positive for a long time, so they do not always provide a clear test of cure.

Complications

Most symptomatic infections improve, but inflammation can occasionally injure the tissue around a larva. The risk depends on where the larvae travel and how severe the immune reaction becomes.

Possible complications include:

Eye complications can be mistaken for other retinal conditions. A retinal scar may affect central or side vision, depending on its location.

Serious heart and nervous system complications are uncommon. When they occur, early specialist assessment is important because the damage may not fully reverse after the larvae are no longer active.

- Lasting liver or lung inflammation
- Severe wheezing or breathing difficulty
- Inflammation of the heart muscle
- Inflammation in the brain or surrounding tissues
- Seizures or other nervous system problems
- Permanent visual impairment from eye involvement

Prevention

There is no vaccine for visceral larva migrans. Many infections can be prevented by reducing contact with animal feces and contaminated soil.

Useful steps include:

Handwashing after touching pets is sensible, but normal contact such as stroking a dog or cat is not the main route of infection. Risk is more closely linked to swallowing mature eggs from a contaminated environment.

If a child repeatedly eats soil or other non-food items, seek routine medical advice. Pica can have behavioural or nutritional causes and may increase exposure to several infections.

- Wash your hands after handling soil, playing outdoors, or cleaning up animal feces
- Wash fruits and vegetables to remove soil
- Cover sandboxes when they are not being used
- Discourage children from eating soil or putting dirty objects in their mouths
- Pick up dog and cat feces promptly and dispose of it safely
- Arrange regular veterinary care and parasite control for dogs and cats
- Cook meat and animal organs thoroughly

Living with it and what to expect

The larvae cannot complete their life cycle inside your body. Over time, they die or become inactive, but inflammation may continue after that happens.

People with mild visceral larva migrans often recover without lasting problems. Cough, fever, abdominal discomfort, and tiredness may improve over weeks or months. Eosinophil counts can take time to return to normal.

Recovery may take longer when several organs are affected. Follow-up is used to check that symptoms and blood abnormalities are improving and that medicines are not causing problems.

Antibody tests can remain positive after recovery. A positive test later does not necessarily mean that the infection is still active. Reinfection is possible if you swallow infective eggs again.

Most people can return to their usual activities as symptoms settle. Lasting effects are more likely after severe inflammation involving the eye, heart, brain, or nervous system. In those cases, longer-term specialist care or support for vision and neurological changes may be

needed.

When to get medical help

Arrange a routine medical appointment if you have ongoing fever, cough, wheezing, abdominal pain, unusual tiredness, or an unexplained high eosinophil count, especially after significant contact with soil or animal feces. These symptoms have many possible causes, so an assessment is needed rather than assuming they are due to a parasite.

Seek prompt medical advice for new blurred vision, floating spots, eye pain, or reduced vision. Eye inflammation needs timely examination because several conditions can produce similar symptoms.

Seek urgent medical care for chest pain, worsening shortness of breath, marked weakness, or difficulty walking.

Call emergency services for:

These symptoms do not necessarily mean visceral larva migrans, but they require immediate assessment.

- Severe trouble breathing
- A seizure
- New confusion or loss of consciousness
- Sudden major loss of vision
- Stroke-like symptoms, such as facial drooping or one-sided weakness

Common questions

How did I get visceral larva migrans?

The usual route is accidentally swallowing mature roundworm eggs from contaminated soil, sand, food, or hands. Less often, infection follows eating raw or undercooked animal tissues containing larvae.

Can I get it directly from my dog or cat?

Pets can contribute eggs to the environment through their feces, but those eggs need time outside the animal to become infective. The main risk is swallowing eggs from contaminated soil or surfaces, not ordinary contact such as petting an animal.

Can I give it to somebody else?

No. The larvae do not become adult worms inside humans, and infected people do not pass Toxocara eggs in their stool. Visceral larva migrans does not spread through coughing, touching, or sharing food.

Will I see worms in my stool?

No. A person with toxocariasis carries migrating larvae, not adult intestinal worms. The larvae are microscopic and do not produce eggs in the human intestine.

How long does visceral larva migrans last?

Symptoms may settle over weeks or months, but the course is different for each person. More severe organ inflammation can take longer to improve. Blood antibodies may remain positive well after symptoms have resolved.

Can visceral larva migrans affect my eyes?

Toxocara larvae can affect the eye, although this is usually described as ocular larva migrans rather than visceral larva migrans. New visual changes should be assessed promptly because inflammation and scarring can threaten vision.

Sources

- Centers for Disease Control and Prevention. About Toxocariasis
- Centers for Disease Control and Prevention. Clinical Overview of Toxocariasis
- Centers for Disease Control and Prevention. Clinical Care of Toxocariasis
- Centers for Disease Control and Prevention. DPDx: Toxocariasis
- Ma G, Holland CV, Wang T, et al. Human toxocariasis. The Lancet Infectious Diseases. 2018;18(1):e14-e24 30331-6)
- MSD Manual Professional Edition. Toxocariasis