CONDITION

Echinococcosis

Echinococcosis is a tapeworm infection that forms slow-growing cysts or invasive lesions in internal organs.

WHAT IT IS
Tapeworm infection causing cysts or invasive organ lesions

BODY SYSTEM
Liver, lungs, and sometimes other organs

MAIN SYMPTOMS
Abdominal pain, cough, chest pain, jaundice

WHAT CAUSES IT
Infection after swallowing Echinococcus tapeworm eggs

HOW IT IS DIAGNOSED
Imaging, blood tests, and sometimes tissue examination

MAIN TREATMENT
Monitoring, antiparasitic medicine, procedures, or surgery

CAN IT BE CURED?
Sometimes - complete removal can eliminate infection

IS IT AN EMERGENCY?
Sometimes - cyst rupture or severe allergic reaction

LONG-TERM OUTLOOK
Often manageable; alveolar infection can be life-threatening

Overview

Echinococcosis is an infection caused by the larval stage of Echinococcus tapeworms. People become infected by swallowing microscopic tapeworm eggs. The larvae can then travel through the body and grow in an organ.

The condition occurs worldwide. Risk is higher where tapeworms circulate between dogs or wild canids, such as foxes, and livestock.

There are two main forms.

Cystic echinococcosis causes fluid-filled sacs called hydatid cysts, most often in the liver or lungs. They may grow slowly for years without symptoms.

Alveolar echinococcosis usually begins in the liver. It grows as connected spaces that can

invade nearby tissue and spread to other organs, making it more difficult to treat.

Echinococcosis can damage an organ, become infected, or rupture. However, not every cyst needs immediate treatment. Management depends on its type, location, size, activity, and effect on nearby structures.

Symptoms

Many people have no symptoms at first, and the infection may be found during a scan for another reason. Symptoms can appear months or years after infection.

A liver cyst or lesion may cause:

A lung cyst may cause cough, chest pain, or shortness of breath. Some people cough up blood or salty-tasting fluid if a cyst opens into an airway.

Less commonly, echinococcosis affects the brain, bones, kidneys, spleen, heart, or other tissues. Brain involvement can cause headaches, weakness, or seizures. Bone involvement may cause persistent pain or fractures.

A leaking or ruptured cyst can release parasite material, causing hives, swelling, wheezing, faintness, or a severe allergic reaction called anaphylaxis. Released material can also produce new cysts elsewhere.

Alveolar echinococcosis may cause persistent upper abdominal discomfort, weight loss, tiredness, or jaundice.

- Pain, pressure, or fullness in the upper abdomen
- Nausea or reduced appetite
- A lump or swelling in the abdomen
- Jaundice, meaning yellow skin or eyes, if bile flow is blocked

Causes and risk factors

Adult Echinococcus tapeworms live in the intestines of dogs, foxes, and other canids. Their microscopic eggs pass into the environment in animal stool.

People become infected when contaminated material reaches the mouth. This may happen through unwashed hands, food, water, soil, animal fur, or objects contaminated with infected stool.

Risk may be higher if you:

Echinococcosis does not result from eating a hydatid cyst in meat. The infective eggs come from the stool of infected canids. The condition does not normally spread directly between people.

Exposure can remain relevant for years because cysts grow slowly. Finding one does not necessarily mean the infection is recent.

- Live in or visit an area where the parasite circulates
- Handle dogs that eat raw livestock organs
- Work with livestock, animal carcasses, dogs, or wild canids
- Eat unwashed produce from potentially contaminated ground
- Lack reliable handwashing, safe water, or controlled animal slaughter

Diagnosis

Diagnosis usually begins with imaging. Ultrasound is especially useful for liver cysts because it can show their internal structure and activity. CT or MRI can provide more detail, identify other affected organs, and help plan treatment. Chest imaging may identify lung cysts.

Blood tests can look for antibodies to the parasite. A positive result may support the diagnosis but cannot confirm it alone. Some infected people have negative antibody tests, particularly with inactive cysts or disease limited to certain organs.

Doctors consider imaging, blood results, symptoms, and exposure history together. Cystic echinococcosis is often staged by ultrasound appearance to distinguish active cysts from those becoming inactive or dead.

Alveolar echinococcosis may resemble a liver tumour. Additional scans and, in selected cases, tissue examination may be needed.

A suspected hydatid cyst should not be punctured as an ordinary cyst. Leakage can cause an allergic reaction or spread parasite material. Any sampling or drainage must be planned by specialists using risk-reduction techniques.

Treatment and management

Treatment depends on the type of echinococcosis, the organ involved, and the cyst or lesion's features. Care may involve infectious disease, liver, lung, imaging, and surgical specialists.

Some inactive, uncomplicated cysts can be monitored with scheduled imaging. This

watch-and-wait approach means the cyst is being observed, not ignored.

Antiparasitic medicines, usually from the benzimidazole group, may stop parasite growth or help kill it. Treatment may be prolonged and requires medical supervision. Blood tests may monitor liver function and blood cell counts.

Selected liver cysts can be treated with PAIR, meaning puncture, aspiration, injection, and re-aspiration. Under imaging guidance, a specialist drains the cyst, applies a parasite-killing solution, and removes the fluid. PAIR is not suitable for every cyst.

Surgery may be recommended for large, complicated, ruptured, infected, or strategically located cysts. The aim is to remove or control the cyst while preventing leakage. Antiparasitic medicine may be used around the procedure.

For alveolar echinococcosis, complete surgical removal offers the best chance of cure when possible. Antiparasitic treatment may continue for years. If complete removal is not possible, long-term medicine can suppress growth. Some people with severe liver damage may be assessed for transplantation.

Do not stop treatment or follow-up because symptoms improve. Imaging is needed to assess the infection inside the affected organ.

Complications

Cystic echinococcosis can cause problems by pressing on tissue, connecting with an airway or bile duct, or developing a bacterial infection.

Possible complications include:

Alveolar echinococcosis can progressively destroy liver tissue and invade blood vessels or bile ducts. It may spread to the lungs, brain, or other organs and can become life-threatening without effective treatment.

Regular imaging can detect important changes before they cause severe symptoms.

- Blocked or infected bile ducts
- Lung compression or breathing problems
- Cyst rupture after growth, injury, or a procedure
- Severe allergic reaction after leakage
- New cysts caused by spread of parasite material
- Reduced function of the affected organ

Prevention

There is no routinely available human vaccine. Prevention focuses on avoiding tapeworm eggs and interrupting transmission between canids and livestock.

Wash your hands with soap and water after handling dogs, working with soil, or touching animal stool, and before preparing or eating food. Wash produce that may have contacted contaminated soil. Use safe drinking water where sanitation is uncertain.

Dogs should not be fed raw organs from sheep, goats, cattle, or other livestock. Follow local veterinary and public health rules for slaughter and organ disposal. Veterinary deworming can reduce infection in dogs, but the schedule should come from a veterinarian or animal-health authority.

Avoid touching wild canid stool. Use gloves and wash carefully after handling hunted animals, carcasses, or potentially contaminated materials.

Living with it and what to expect

The course differs between cystic and alveolar echinococcosis.

A cystic echinococcosis cyst may remain stable, become inactive, or grow. Some inactive cysts never cause symptoms and need only periodic scans. Others require medicine, a guided procedure, or surgery. Follow-up often continues for years because a cyst can reactivate or return.

You may need repeated ultrasound, CT, or MRI scans. Blood tests can support follow-up, although antibody levels may remain positive after successful treatment and cannot be interpreted alone.

Recovery after a procedure depends on the affected organ and treatment extent. Most everyday activities can often resume, but temporary restrictions may be necessary after surgery or when rupture risk is higher.

Alveolar echinococcosis is usually a long-term condition. Complete removal may be curative, but surveillance remains important. When removal is impossible, long-term medicine may control growth. Regular appointments monitor both the infection and treatment effects.

Ask your care team to explain the type and stage, the purpose of each scan, and which changes would alter treatment.

When to get medical help

Arrange a routine medical appointment for persistent upper abdominal discomfort, unexplained jaundice, a lasting cough, or other concerning symptoms, especially after living or working where echinococcosis occurs. These symptoms have many possible causes and do not necessarily indicate this infection.

If you have been diagnosed, contact your care team promptly for new or worsening pain, fever, jaundice, increasing cough, or breathlessness. Keep scheduled imaging and blood-test appointments even when you feel well.

Seek emergency care for:

These symptoms could indicate cyst rupture, a severe allergic reaction, bleeding, or involvement of a critical organ.

- Sudden trouble breathing, wheezing, facial swelling, or faintness
- Widespread hives with breathing or circulation symptoms
- Sudden severe chest or abdominal pain
- Coughing up a large amount of blood or fluid
- A new seizure, loss of consciousness, or sudden weakness

Common questions

Is echinococcosis contagious between people?

Not through ordinary contact. Infection usually follows swallowing eggs shed in the stool of infected dogs, foxes, or other canids. It does not usually spread through touching, coughing, sex, or sharing meals.

Can echinococcosis be cured completely?

Sometimes. Complete removal of a cyst or alveolar lesion may eliminate the infection, and some cysts become inactive without surgery. If alveolar echinococcosis cannot be fully removed, long-term medicine may control it.

Is a hydatid cyst cancer?

No. It is caused by a parasite. Alveolar echinococcosis can resemble an invasive tumour because it grows into nearby tissue, so careful testing is needed.

Can I get echinococcosis from my dog?

It is possible if a dog carries an adult Echinococcus tapeworm and eggs from its stool

contaminate hands, fur, food, or the environment. Veterinary parasite control, handwashing, and not feeding dogs raw livestock organs reduce risk.

Why can't a suspected hydatid cyst just be drained?

Ordinary drainage could spill parasite material, triggering a severe allergic reaction or seeding new cysts. Selected cysts can be drained using a planned specialist technique, but this is not appropriate for every cyst.

How long does follow-up last?

It often continues for years because changes are slow and recurrence may appear late. The schedule depends on the infection type, treatment, affected organ, and scan findings.

Sources

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