CONDITION

Amebic liver abscess

Learn how amebic liver abscess develops, its symptoms and complications, and how clinicians diagnose, treat, and monitor this parasitic liver infection.

WHAT IT IS
Parasitic abscess of the liver

BODY SYSTEM
Digestive

MAIN SYMPTOMS
Fever, upper-right abdominal pain, appetite loss, fatigue

WHAT CAUSES IT
Infection with Entamoeba histolytica

HOW IT IS DIAGNOSED
Imaging with antibody, stool antigen or molecular testing

MAIN TREATMENT
Two-stage antiparasitic medicines

CAN IT BE CURED?
Yes, most recover with appropriate treatment

IS IT AN EMERGENCY?
Sometimes, with difficulty breathing

LONG-TERM OUTLOOK
Most recover, but delayed treatment raises complication risk

Overview

An amebic liver abscess is a pocket of damaged, inflamed tissue in the liver caused by the parasite Entamoeba histolytica . The parasite usually enters the body when a person swallows food or water contaminated with microscopic traces of infected stool.

Most E. histolytica infections stay in the intestines and may cause no symptoms. In some people, the parasite invades the wall of the large intestine. It can then travel through the bloodstream to the liver, where it causes an abscess. This form of infection is called extraintestinal amebiasis , meaning that it has spread outside the intestines.

An amebic liver abscess is different from a pyogenic liver abscess, which is caused by bacteria. The two conditions may look similar on imaging, but their treatment can differ. An amebic abscess is treated with medicine that kills the parasite in the tissues, followed by a second

medicine that clears parasites remaining in the intestine.

The condition is uncommon in places with reliable sanitation but occurs worldwide. It is more likely after living in or traveling to areas where amebiasis is common. Prompt treatment is important because an untreated abscess can enlarge or, less often, rupture into the abdomen, chest, or the sac around the heart.

Symptoms

Symptoms often develop over days to weeks. An abscess may appear during an intestinal infection or months after the original exposure. Some people do not recall having diarrhea.

Common symptoms include:

Diarrhea, stomach cramps, or blood in the stool may occur, but many people with an amebic liver abscess have no active bowel symptoms. Yellowing of the skin or eyes, called jaundice, is not typical and may suggest a large abscess, pressure on the bile ducts, or another liver problem.

Arrange prompt medical assessment for ongoing fever with upper-abdominal pain, especially after travel or residence in an area where amebiasis occurs.

Seek emergency care for severe or rapidly worsening abdominal or chest pain, difficulty breathing, fainting, confusion, vomiting blood, a rigid or swollen abdomen, or signs of shock such as cold, clammy skin and extreme weakness. These symptoms can occur with rupture or another serious condition and require immediate evaluation.

- Fever, sometimes with chills or sweating
- Steady pain or tenderness in the upper-right abdomen
- Loss of appetite, nausea, or weight loss
- Fatigue or a general feeling of illness
- Pain that may spread to the right shoulder
- Cough, chest discomfort, or pain with deep breathing if the abscess irritates the diaphragm

Causes and risk factors

The cause is infection with E. histolytica . The parasite has a hardy form, called a cyst, that can survive outside the body. Infection begins when these cysts are swallowed. This can happen

through contaminated food or water, unwashed hands, or sexual contact that involves exposure to stool.

Inside the intestine, the cysts release active forms called trophozoites. These organisms may remain in the bowel, invade the bowel wall, or enter veins that carry blood from the intestine to the liver. Most liver abscesses affect the liver's right side because of its blood supply.

Risk may be higher among people who:

People can carry E. histolytica without symptoms and still pass cysts in their stool. The parasite is not spread by casual contact alone; transmission requires swallowing material contaminated with infected stool.

Several other Entamoeba species can look like E. histolytica under a microscope but do not usually cause invasive disease. This is one reason modern stool antigen or molecular testing may be more useful than microscopy alone.

- Live in or have traveled to areas with limited sanitation and unsafe water
- Have close household or sexual contact with someone who is infected
- Have oral-anal sexual exposure
- Live in crowded settings where hygiene is difficult to maintain
- Have a weakened immune system or receive medicines that suppress immunity
- Have used corticosteroids like prednisone or hydrocortisone while an unrecognized invasive amebic infection was present

Diagnosis

A clinician considers the symptoms, travel and residence history, possible exposures, and physical examination. Tell the care team about recent and past international travel, even if it occurred months earlier. Also mention diarrhea, blood in the stool, immune-suppressing medicines, and any previous treatment for parasites.

Blood tests may show inflammation, anemia, or changes in liver enzymes. These findings support the evaluation but do not confirm the cause. Blood cultures may be collected when a bacterial liver abscess is possible.

Ultrasound, CT, or MRI can show the abscess and its location. Imaging can also help determine whether it is close to the diaphragm, abdominal cavity, or heart. However, a scan usually cannot prove that an abscess is amebic rather than bacterial.

Antibody testing can support the diagnosis because most people with an amebic liver abscess

develop antibodies to E. histolytica . Antibodies may remain positive for years, so a positive result does not always prove that an infection is new. This is especially important for people who have lived in an area where exposure is common. A negative test early in the illness may sometimes need to be repeated if suspicion remains high.

Stool testing may use antigen detection or a molecular test, such as polymerase chain reaction, to identify E. histolytica . A stool test can be negative when the infection is mainly in the liver. Routine microscopy is less reliable because it may miss the parasite or confuse it with a harmless related species.

Most suspected amebic abscesses do not need to be sampled. Image-guided needle aspiration may be considered when the diagnosis is uncertain, a bacterial infection is also possible, the abscess has features that raise concern for rupture, or symptoms are not improving as expected. The drained material may not contain visible parasites because trophozoites are more likely to be found near the abscess wall.

Other possible causes of a liver lesion include a bacterial or fungal abscess, an infected cyst, a parasitic hydatid cyst, and certain tumors. Testing is selected to separate these conditions safely.

Treatment and management

Treatment usually involves two stages. The first medicine reaches parasites that have invaded the liver and other tissues. A nitroimidazole medicine, commonly metronidazole or tinidazole, is generally used for this purpose.

A tissue-active medicine does not reliably eliminate every parasite remaining inside the bowel. It is therefore followed by a luminal agent , a medicine that acts within the intestine. Depending on local availability and individual factors, this may be paromomycin, iodoquinol, or diloxanide furoate.

Completing both stages reduces the chance of persistent intestinal infection and further transmission. The specific medicine, timing, and duration depend on factors such as pregnancy, age, other health conditions, medicine interactions, local availability, and whether a bacterial infection is also suspected. Patients should follow the prescribed plan rather than using leftover antibiotics or antiparasitic medicines.

Common issues such as nausea, a metallic taste, or stomach upset can occur with some treatments. A pharmacist or clinician can explain medicine-specific precautions, including instructions about alcohol and possible interactions. Contact the prescribing team if side effects make it difficult to complete treatment.

Many people begin to improve within several days of effective therapy, although tiredness or mild discomfort may last longer. Supportive care may include fluids, nutrition, fever control, and pain relief. Hospital care may be appropriate for severe illness, difficulty taking oral medicine, diagnostic uncertainty, or concern about complications.

Routine drainage is not necessary for most uncomplicated amebic liver abscesses. Needle aspiration or catheter drainage may be considered when:

Surgery is rarely needed. It may be required for uncontrolled rupture, severe secondary infection, or another complication that cannot be managed with medicines and image-guided drainage.

Good hand hygiene and safe food and water practices help prevent transmission. Until intestinal infection has been treated, avoid sexual activities that could expose another person to stool.

- The diagnosis remains uncertain
- A bacterial abscess cannot be excluded
- The abscess is in a location where rupture could be especially dangerous
- There is concern that rupture is developing
- The person is not improving after an appropriate period of treatment

Complications

Most people recover with appropriate treatment. Complications are more likely when the diagnosis or treatment is delayed, the abscess is large or poorly located, or another infection is present.

The main concern is rupture. An abscess can break into the abdominal cavity and cause inflammation of the abdominal lining, called peritonitis. It can also extend through the diaphragm into the chest, leading to fluid or infection around the lung. A left-sided liver abscess can rarely rupture into the sac around the heart and interfere with the heart's ability to pump.

Other possible complications include:

New breathing difficulty, severe chest or abdominal pain, fainting, confusion, or rapid deterioration should be treated as an emergency rather than waiting for a routine appointment.

- Secondary infection of the abscess with bacteria

- Blockage or inflammation of the bile ducts
- Abnormal connections between the liver and nearby organs
- Spread to distant sites, including the brain, which is very rare
- Sepsis or shock from a severe infection or rupture

Follow up

Follow-up helps confirm that symptoms are resolving and that the full treatment course has been completed. A clinician may reassess fever, abdominal pain, appetite, weight, and medicine side effects. Blood tests may be repeated if they were abnormal or if recovery is slower than expected.

Imaging changes often improve more slowly than symptoms. A residual cavity can remain visible after the infection has been controlled. Repeat ultrasound or CT is not always necessary for someone recovering as expected, but it may be used when symptoms persist, complications were present, or the original diagnosis was uncertain.

Seek prompt medical advice if fever or pain does not begin to improve, returns after improving, or is joined by vomiting, jaundice, worsening weakness, or new diarrhea. Emergency symptoms include difficulty breathing, fainting, confusion, severe chest or abdominal pain, or a suddenly swollen or rigid abdomen.

Ask whether follow-up stool testing is appropriate. Household members or sexual partners should not automatically take medicine, but they may need medical advice or testing if they have symptoms or shared a likely exposure.

Sources

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