CONDITION

Acute cholecystitis

Learn about acute cholecystitis, including gallbladder inflammation symptoms, causes, diagnosis, treatment, complications, and when to seek urgent care.

WHAT IT IS
Sudden inflammation of the gallbladder

BODY SYSTEM
Digestive

MAIN SYMPTOMS
Upper-right abdominal pain, tenderness, fever, nausea and vomiting

WHAT CAUSES IT
Gallstone blockage

HOW IT IS DIAGNOSED
Ultrasound or HIDA scan

MAIN TREATMENT
Gallbladder removal surgery

CAN IT BE CURED?
Yes, gallbladder removal treats blockage

IS IT AN EMERGENCY?
Sometimes, with severe or rapidly worsening pain

LONG-TERM OUTLOOK
Most recover with timely treatment

Overview

Acute cholecystitis is sudden inflammation of the gallbladder. The gallbladder is a small organ beneath the liver that stores bile, a fluid that helps the body digest fat.

Most cases begin when a gallstone blocks the cystic duct, the narrow tube through which bile leaves the gallbladder. Trapped bile irritates the gallbladder and raises pressure inside it. This can reduce blood flow to the gallbladder wall and may allow infection to develop.

Acute cholecystitis is different from a short episode of biliary colic. Biliary colic happens when a gallstone temporarily blocks bile flow. It usually causes pain that improves within several hours and does not involve ongoing gallbladder inflammation. With acute cholecystitis, pain and tenderness generally continue, and fever or other signs of inflammation may appear.

Prompt medical assessment matters because an inflamed gallbladder can become infected, lose its blood supply, or develop a hole. Treatment in a hospital is often needed. Many people ultimately have surgery to remove the gallbladder.

Symptoms

The main symptom is steady pain in the upper-right or upper-middle abdomen. The pain may begin after a meal, but it can start at any time. It often lasts longer than several hours and may become worse with deep breathing or movement.

Pain can spread to the right shoulder blade or back. The upper-right abdomen may feel very tender when touched.

Other possible symptoms include:

Jaundice, which causes yellow skin or eyes, is not typical of uncomplicated acute cholecystitis. It may suggest that a stone is also blocking the main bile duct or that another complication is present. Dark urine and pale stools can occur with bile duct blockage.

Older adults, people with diabetes, and people whose immune systems are weakened may have less obvious symptoms. They may develop weakness, confusion, poor appetite, or a general decline without a high fever or severe pain.

Persistent upper-right abdominal pain should receive prompt, same-day medical assessment, especially when it occurs with fever, vomiting, or marked tenderness. Seek emergency care for severe or rapidly worsening pain, fainting, confusion, difficulty breathing, yellow skin or eyes with fever, repeated vomiting that prevents fluid intake, or signs of shock such as cold, clammy skin and severe weakness.

- Fever or chills
- Nausea and vomiting
- Loss of appetite
- Abdominal bloating
- Sweating or feeling generally unwell

Causes and risk factors

Gallstones cause most cases of acute cholecystitis. A stone can become stuck in the cystic duct, preventing the gallbladder from emptying. Continued blockage causes swelling and

chemical irritation. Bacteria may contribute, but infection is not present in every case.

Less commonly, acute inflammation occurs without gallstones. This is called acute acalculous cholecystitis. It mainly affects people who are critically ill, have had major surgery or serious trauma, have severe burns, or need prolonged intensive care. Reduced gallbladder movement and poor blood flow may contribute. Acalculous cholecystitis can progress quickly and may be harder to recognize because another illness can hide its symptoms.

Rare causes include blockage from a tumor, certain infections, inflammation of nearby blood vessels, or unusual problems with gallbladder structure.

Factors that increase the chance of developing gallstones may indirectly raise the risk of acute cholecystitis. These include:

Having one or more risk factors does not mean a person will develop acute cholecystitis. Some people with gallstones never have symptoms, while others develop complications without having known about their stones.

- Increasing age
- Obesity or rapid weight loss
- Pregnancy
- A family history of gallstones
- Diabetes
- Conditions that cause rapid breakdown of red blood cells
- Disease or surgery affecting the last part of the small intestine
- Certain medicines or hormone exposures that increase gallstone formation

Diagnosis

Diagnosis is based on symptoms, a physical examination, blood tests, and imaging. No single symptom or test confirms every case.

During the examination, a clinician may press beneath the ribs on the right while the person breathes in. Sudden pain that interrupts the breath is called a Murphy sign. This supports the diagnosis, but it can be absent, particularly in older adults or people with other serious illnesses.

Blood tests may show an increased white blood cell count or other signs of inflammation. Liver tests and bilirubin help look for blockage of the main bile duct or liver involvement. A lipase test may be used to check for pancreatitis, which is inflammation of the pancreas. Blood tests

can be normal early in the illness and cannot confirm acute cholecystitis by themselves.

Ultrasound is usually the first imaging test. It can show gallstones, thickening of the gallbladder wall, fluid around the gallbladder, or tenderness when the ultrasound probe presses over it. Ultrasound does not use radiation.

If the diagnosis remains uncertain, a hepatobiliary scan may be used. This nuclear medicine test is sometimes called a HIDA scan. A small amount of radioactive tracer follows the normal flow of bile. Failure of the gallbladder to fill can indicate cystic duct blockage.

A CT scan may help identify complications such as tissue damage, a collection of pus, or a perforation. It can also find other causes of abdominal pain. Magnetic resonance cholangiopancreatography, or MRCP, is a type of MRI that can examine the bile ducts when a main bile duct stone is suspected.

Clinicians also consider other conditions that can cause similar pain, including pancreatitis, hepatitis, stomach ulcers, appendicitis, kidney infection, pneumonia, and some heart or lung problems.

Treatment and management

Acute cholecystitis is usually treated in a hospital. The treatment plan depends on the severity of inflammation, whether a bile duct stone or infection is present, and whether the person is well enough for surgery.

Initial care commonly includes not eating for a period of time so the gallbladder is not stimulated to contract. Fluids are given through a vein to prevent or treat dehydration. Pain relief and medicine for nausea may also be provided. The clinical team will monitor temperature, blood pressure, urine output, blood tests, and other signs of improvement or worsening.

Antibiotics like amoxicillin or doxycycline may be given when infection is suspected or when the risk of infection is significant. The choice and length of treatment depend on illness severity, local bacterial resistance patterns, kidney and liver function, allergies, and whether the source of inflammation has been controlled. Antibiotics do not remove the blocked gallbladder or replace surgery when surgery is needed.

For many people who are fit for an operation, the preferred definitive treatment is laparoscopic cholecystectomy during the same hospital admission. In this procedure, the surgeon removes the gallbladder through several small abdominal incisions. Removing the gallbladder treats the current blockage and prevents future gallbladder attacks.

Sometimes a larger incision, called open surgery, is safer because of severe inflammation, scar

tissue, bleeding, or unclear anatomy. Changing from laparoscopic to open surgery is a safety decision rather than necessarily a surgical complication.

The liver continues to make bile after gallbladder removal. Bile flows directly into the small intestine, so the gallbladder is not essential for digestion. Most people can return to a normal diet, although temporary changes in bowel habits can occur.

If surgery is temporarily too risky, a clinician may place a drainage tube through the skin into the gallbladder. This is called percutaneous cholecystostomy. It can relieve pressure and drain infected bile while other medical problems are treated. Drainage may be a bridge to later surgery, but the long-term plan depends on recovery and overall health.

Endoscopic retrograde cholangiopancreatography, or ERCP, is not a routine treatment for a stone limited to the gallbladder. It may be needed when a stone blocks the main bile duct or when cholangitis, an infection of the bile ducts, is suspected. During ERCP, a flexible tube is passed through the mouth into the small intestine so the bile duct can be treated.

Complications

Most people recover with timely treatment, but complications can occur. Continued pressure and inflammation may damage the gallbladder's blood supply. This can cause gangrene, meaning death of part of the gallbladder wall.

A weakened gallbladder wall can develop a hole, or perforation. Bile may then leak into the abdomen, causing inflammation of the abdominal lining. Infection can also form a pocket of pus called an abscess or fill the gallbladder with pus, known as empyema.

Bacteria can enter the bloodstream and cause sepsis, a serious whole-body response to infection. People who are older, frail, immunocompromised, or critically ill may be at greater risk of severe illness.

Gallstones can also cause separate but related complications. A stone in the main bile duct may lead to jaundice, cholangitis, or pancreatitis. Rarely, long-term inflammation creates an abnormal connection between the gallbladder and intestine. A large stone may then enter the intestine and cause a blockage.

Possible complications of treatment include bleeding, wound infection, bile leakage, injury to a bile duct, blood clots, or problems related to anesthesia. The surgical team can explain how these risks apply to the planned procedure without assuming what will happen in an individual case.

Follow up

After hospital treatment, follow-up depends on whether the gallbladder was removed, drained, or treated without a procedure.

After surgery, follow the care team's instructions about wound care, bathing, lifting, driving, and returning to work. Mild incision pain and fatigue can be expected early in recovery. Some people notice loose stools or discomfort after fatty foods for a short time. A gradual return to usual foods may be more comfortable, but a permanent low-fat diet is not required for everyone.

Contact the surgical or medical team promptly for increasing abdominal pain, redness or drainage from an incision, fever, persistent vomiting, worsening diarrhea, jaundice, or difficulty eating and drinking. Seek emergency care for severe pain, breathing difficulty, fainting, confusion, heavy bleeding, or rapidly worsening illness.

People who have a gallbladder drain need specific instructions for emptying the collection bag, keeping the tube secure, and recognizing blockage or infection. A tube that stops draining, falls out, leaks, or causes increasing pain requires prompt contact with the treating team.

If the gallbladder was not removed, follow-up is important because symptoms or inflammation can return. The clinician may discuss later surgery once acute illness and other medical concerns have improved. Routine follow-up should also review any bile duct stones, abnormal liver tests, pathology results, or medicines started during the hospital stay.

Sources

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