

## Cholecystitis

Cholecystitis (ko-luh-sis-TIE-tis) is inflammation of the gallbladder. It usually occurs when drainage from the gallbladder becomes blocked (often from a gallstone). It may be acute (come on suddenly) and cause severe pain in the upper abdomen. Or it may be chronic (multiple recurrent episodes) with swelling and irritation that occurs over time.

Your doctor may use abdominal ultrasound, abdominal CT, magnetic resonance cholangiopancreatography (MRCP) or nuclear imaging to help diagnose your condition. Treatment may include fasting, antibiotic medication and having a drainage tube placed in the gallbladder. However, because it can often reoccur, the most common treatment is to have surgery to remove your gallbladder.



### What is cholecystitis?

Cholecystitis means inflammation (<http://www.radiologyinfo.org>) of the gallbladder (<http://www.radiologyinfo.org>). The gallbladder is a pear-shaped organ that sits beneath your liver and stores bile (<http://www.radiologyinfo.org>). If your gallbladder is inflamed, you may have pain in the upper right or mid-portion of the abdomen and you may be tender to the touch there.

Bile is made in the liver. The gallbladder stores bile and pushes it into the small intestine where it is used to help digest food. When the drainage pathway for the bile stored in the gallbladder (called the cystic duct) becomes blocked, usually by a gallstone (<https://www.radiologyinfo.org/en/info/gallstones>), the gallbladder becomes swollen and may become infected. This results in cholecystitis. The cystic duct drains into the common bile duct, which carries the bile into the small intestine. A gallstone may also become stuck in the common bile duct. This condition (choledocholithiasis) requires a procedure to remove or bypass the blockage.

Cholecystitis may be:

- Acute (occur suddenly) – This inflammation often causes severe pain in the mid or right upper abdomen. Pain can also spread between the shoulder blades. In severe cases, the gallbladder may tear or burst and release bile into the abdomen, causing severe pain. This can be a life-threatening situation that requires immediate attention.
- Chronic (multiple episodes of inflammation) – Recurrent bouts of mild swelling and irritation/inflammation will often damage the wall of the gallbladder causing it to thicken, shrink and lose proper function

Other symptoms include:

- nausea
- vomiting
- fever
- abdominal pain that gets worse when taking a deep breath
- abdominal pain and cramping after meals (especially fatty foods)

### How is cholecystitis diagnosed and evaluated?

Your doctor may order blood tests to see if you have a gallbladder infection. Often, the white blood cell count in our blood may become elevated as a sign of the infection. One or more of the following radiology tests also may be done:

- Abdominal ultrasound (<https://www.radiologyinfo.org/en/info/abdominus>) : This is often the first test done to evaluate for cholecystitis. Ultrasound uses sound waves to produce pictures of the gallbladder and the bile ducts. It is used to identify signs of inflammation involving the gallbladder and is very good at showing gallstones.

*For information about ultrasound procedures performed on children, visit the Pediatric Abdominal Ultrasound (<https://www.radiologyinfo.org/en/info/abdomus-pdi>) page.*

- Abdominal CT (<https://www.radiologyinfo.org/en/info/abdominct>) : Computed tomography (CT) uses x-rays to produce detailed pictures of the abdomen, liver, gallbladder, bile ducts and intestine to help identify inflammation of the gallbladder or blocked bile flow. Sometimes (but not always) it can also show gallstones. *See the Radiation Dose (<https://www.radiologyinfo.org/en/info/safety-xray>) page for more information about CT.*
- Magnetic resonance cholangiopancreatography (MRCP) (<https://www.radiologyinfo.org/en/info/mrcp>) : MRCP is a type of MRI exam that makes detailed images of the liver, gallbladder, bile ducts, pancreas (<http://www.radiologyinfo.org>) and pancreatic duct (<http://www.radiologyinfo.org>) . It is very good at showing gallstones, gallbladder or bile duct inflammation, and blocked bile flow. *See the MRI Safety (<https://www.radiologyinfo.org/en/info/safety-mr>) page for more information.*
- Hepatobiliary nuclear imaging (<https://www.radiologyinfo.org/en/info/hepatobiliary>) : This nuclear medicine test uses an injected radiotracer (<http://www.radiologyinfo.org>) to help evaluate disorders of the liver, gallbladder and bile duct (biliary system (<http://www.radiologyinfo.org>) ). In acute cholecystitis, it can detect blockage of the cystic duct (the duct that is always blocked with acute cholecystitis).

## How is cholecystitis treated?

Your doctor may suggest:

- fasting to rest the gallbladder
- a special, low-fat diet
- pain medication
- antibiotics to treat infection

However, because the condition may come back often, your doctor may recommend you have your gallbladder removed using either:

- laparoscopic surgery. The surgeon uses the belly button and several small cuts to insert a laparoscope (<http://www.radiologyinfo.org>) to see inside the abdomen and remove the gallbladder. You will be asleep for the surgery.
- open surgery. The surgeon makes a cut in the abdomen and removes the gallbladder. You will be asleep for the surgery. *See the Anesthesia Safety (<https://www.radiologyinfo.org/en/info/safety-anesthesia>) page for more information.*

If you cannot have surgery, your doctor may drain bile from the gallbladder. This may be done by:

- Percutaneous cholecystostomy: This procedure is done by a radiologist. It places a tube through the skin directly into the gallbladder using ultrasound or CT guidance. Blocked or infected bile is removed to reduce inflammation. This procedure is typically done in patients who are too sick to have their gallbladder removed. You will be sedated for this procedure. The tube typically has to stay in for at least a few weeks.
- Endoscopic retrograde cholangiopancreatography (ERCP) (<http://www.radiologyinfo.org>) : This procedure is typically done by a doctor who specializes in abdominal disorders (a gastroenterologist). A camera on a flexible tube is passed from the mouth through the stomach and into the beginning of the small bowel. This is where the common bile duct meets the small intestine. The valve mechanism (called the sphincter) at the end of the bile duct can be examined and opened to clear

blocked bile and stones, if necessary. Doctors can also insert a small tube into the main bile duct and inject contrast material to better see the duct. They also may use a laser fiber to destroy small gallstones or use a basket or balloon to retrieve stones or stone fragments. All of this may be done without making any incisions in the abdomen. This procedure poses a small, but real risk of pancreas inflammation or injury. You will be sedated for this procedure.

- Percutaneous transhepatic cholangiography (PTC) (<http://www.radiologyinfo.org>) : This procedure is done by a radiologist. A needle is placed in the bile ducts within the liver using imaging guidance. Contrast material is injected to help locate gallstones that may be blocking bile flow. Some stones can be removed during a PTC. Others may be bypassed by leaving a small stent in place to allow bile to get around the area of blockage. This helps reduce inflammation. You will be sedated for this procedure. *See the Biliary Interventions* (<https://www.radiologyinfo.org/en/info/biliary>) page for more information.

## Which test, procedure or treatment is best for me?

- *Right Upper Quadrant Pain* (<https://www.radiologyinfo.org/en/info/acs-right-upper-quadrant-pain>)

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