

# Gallbladder Cancer: Diagnosis



## How is gallbladder cancer diagnosed?

Gallbladder cancer is often diagnosed at an advanced stage because it does not cause symptoms early on. In the disease when the cancer is small and hasn't spread. When gallbladder disease is suspected, the first test ordered is usually imaging with an ultrasound. A suspicious mass may be seen but often gallstones are found. In many cases, gallbladder cancer is found by chance when surgery is done to remove the gallbladder to treat a problem like gallstones. This surgery is called a laparoscopic cholecystectomy. A laparoscope is a thin, lighted tube that lets a healthcare provider see your gallbladder and nearby organs. The healthcare provider makes a small cut just above your belly button to insert the tube. Tools are then passed through other cuts in the skin to take out the gallbladder. A pathologist checks the gallbladder when it's taken out with surgery. A pathologist is a specialist who looks at cells under a microscope to check for problems, such as cancer.

If your healthcare provider thinks you might have gallbladder cancer, you will need exams and tests to be sure. First, your healthcare provider will ask you questions. They will ask you about your health history, your symptoms, risk factors, and family history of disease. Your healthcare provider will also give you a physical exam.

## What tests might I need?

You may have one or more of these tests:

- Ultrasound
- Endoscopic ultrasound (EUS)
- CT scan
- MRI
- Cholangiography
- Biopsy
- Liver function blood tests
- Tumor marker blood tests

## Imaging tests

- **Ultrasound.** This test uses sound waves and a computer to create images of the inside of the body. The sound waves bounce off parts of the body and send signals to the computer. A computer then receives the signals and creates images.
- **Endoscopic ultrasound (EUS).** This test combines ultrasound with a tool called an endoscope. It's a long, thin, bendable tube with a light and camera. It's put in through the mouth or the rectum to reach the small intestine near the gallbladder. EUS creates images of the digestive tract and nearby tissues and organs. A small ultrasound tool is on the end of the endoscope. It lets the healthcare provider see high-quality images of your organs. During EUS, a small piece of tissue can also be taken to check for cancer under a microscope.
- **CT scan.** A CT scanner takes many X-rays as it rotates around you. A computer combines these images to create detailed images. A CT scan can help show a gallbladder tumor or tell if the cancer has spread into the nearby liver.
- **MRI.** An MRI scan uses radio waves and strong magnets to create detailed images of the inside of your body. Your healthcare provider may use an MRI scan to look at organs, blood vessels, and lymph

nodes.

- **Cholangiography.** These tests are used to see if the bile ducts are blocked or narrowed by a tumor. Some of these tests can also be used to get samples of cells or fluid to look for cancer or to put a stent (small tube) inside a duct to keep it open. The types of this test include:
  - **Magnetic resonance cholangiopancreatography (MRCP).** This uses the same type of machine used for MRI scans. It doesn't need a contrast agent. And it's not invasive like other types of cholangiograms. This means no tools are put in your body to do this test. A healthcare provider may use MRCP just to get pictures of the bile ducts. But this test can't be used to get biopsy samples or to put stents in the ducts to keep them open.
  - **Endoscopic retrograde cholangiopancreatography.** The ducts are reached by passing an endoscope down the throat and into the small intestine. Dye is put into the ducts, and then X-rays are done. Samples can be taken out through the endoscope to be checked for cancer.
  - **Percutaneous transhepatic cholangiography.** The ducts are reached by passing a needle through the skin over the belly and into the liver. Dye is injected and X-rays are taken to look at the ducts. Samples can be removed, and stents can be placed during this test.

## Biopsy

A biopsy is when a small piece of tissue is removed to be checked for cancer. A biopsy can be done during some of the imaging tests listed above. Or a fine needle biopsy may be done. A fine needle biopsy is usually done with the aid of a CT scan to help locate the tumor. This is called a CT scan-guided biopsy. Or an ultrasound can be used to guide the biopsy location. A tiny tissue sample is then taken out through the needle and checked for cancer cells.

## Blood tests

No blood test can diagnose gallbladder cancer. Blood test results may be abnormal but they are not unique to gallbladder cancer, so they aren't used for diagnosis.

- **Liver function.** These are blood tests that help show if the liver is inflamed and how well the liver is working. They can help diagnose liver and bile duct diseases. The gallbladder is part of the liver and bile duct system. Gallbladder cancer can affect liver function, especially the liver tests connected to the blockage of the bile duct system (bilirubin and alkaline phosphatase). The most common liver function tests are:
  - Albumin
  - Alanine aminotransferase
  - Aspartate aminotransferase
  - Alkaline phosphatase
  - Bilirubin
  - Gamma glutamyl transpeptidase
  - Prothrombin time
- **Tumor markers.** This is another type of blood test. These tests look for increases in certain substances called tumor markers. Some cancers make these substances. If you have gallbladder cancer, 2 markers may be increased. They are carcinoembryonic antigen and carbohydrate antigen 19-9. If you are diagnosed with gallbladder cancer, your healthcare provider may repeat this test during your treatment to see how well your treatment is working.

## Getting your test results

When your healthcare provider has the results of your tests, they will contact you with the results. Your healthcare provider will talk with you about other tests you may need if gallbladder cancer is found. Make sure you understand the results and what follow-up tests and treatment you need.

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