



Milan S. Chakrabarty, M.D.
General Gastroenterology

Indraneel Chakrabarty, M.D., M.A.
Advanced & Interventional
Gastroenterology

Sandra Del Valle, PA-C
Gastroenterology Physician Assistant

Kathleen Linke, PA-C
Gastroenterology Physician Assistant

Two Locations:

HEMET

1003 E. Florida Avenue · Suite 101 · Hemet, CA 92543 · (951) 652-2252

TEMECULA

44274 George Cushman Ct. · Suite 208 · Temecula, CA · (951) 383-6001
(By appt.)

Endoscopic Retrograde Cholangiopancreatography (ERCP)

What is ERCP?

Endoscopic retrograde cholangiopancreatography is a procedure that combines upper gastrointestinal (GI) endoscopy and fluoroscopy to treat problems of the bile and pancreatic ducts. ERCP is also used to diagnose problems, but the availability of non-invasive tests such as magnetic resonance cholangiography has allowed ERCP to be used primarily for cases in which it is expected that treatment will be delivered during the procedure; see "How is ERCP performed?"

What is upper gastrointestinal (GI) endoscopy?

Upper GI endoscopy is a procedure that uses a lighted, flexible endoscope to see and perform procedures inside the upper GI tract. The upper GI tract includes the esophagus, stomach, and duodenum—the first part of the small intestine.

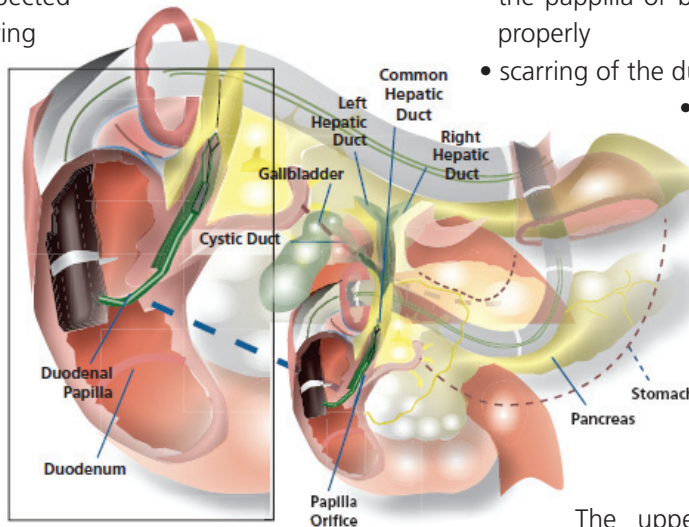
What are the bile and pancreatic ducts?

Ducts are tubelike structures in the body that carry fluids. The bile ducts carry bile, a liquid the liver makes, whose function is to help the body absorb fat. A group of small bile ducts in the liver (called the biliary tree) empties bile into the larger common bile duct. Between meals, the bile is stored in the gallbladder, a pear shaped sac next to the liver.

The pancreatic ducts carry pancreatic juice, a liquid the pancreas makes to help break down food. A group of small pancreatic ducts in the pancreas empties into the main pancreatic duct.

The common bile duct and the main pancreatic duct join

- gallstones that form in the gallbladder and become stuck in the ducts
- inflammation due to trauma or illness, such as pancreatitis or inflammation of the pancreas
- infection
- sphincter of ODDI dysfunction which is when the papilla or bile duct valve doesn't open up properly
- scarring of the ducts, called sclerosis
- pseudocysts accumulations of fluid and tissue debris



How does a person prepare for an ERCP?

The health care provider usually provides written instructions about how to prepare for an ERCP.

The upper GI tract must be empty. Generally, no eating or drinking is allowed 8 hours before ERCP. Smoking and chewing gum are also prohibited during this time.

Patients should tell their health care provider about all health conditions they have, especially heart and lung problems, diabetes, and allergies. Patients should also tell their health care provider about all medications they take. Patients may be asked to temporarily stop taking medications that affect blood clotting or interact with sedatives. Sedatives are usually given during an ERCP to help patients relax and stay comfortable unless performed with general anesthesia.

Medications and vitamins that may be restricted before and after an ERCP include:

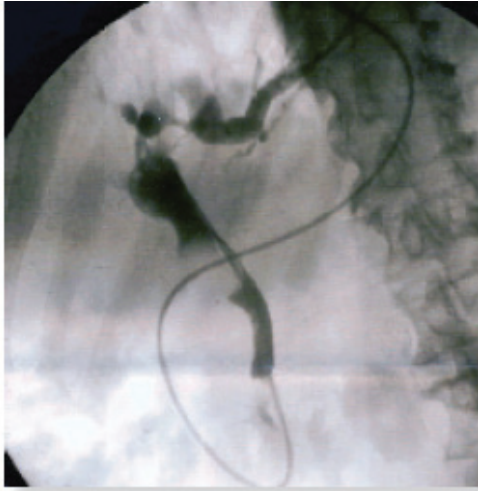
- blood thinners
- diabetes medications

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Driving is not permitted for 12 to 24 hours after an ERCP to allow the sedatives time to completely wear off. Before the appointment, patients should make plans for a ride home.

How is an ERCP performed?

ERCP is conducted at a hospital or outpatient center by a doctor and assistants who have specialized training in this procedure.



Patients may receive a local anesthetic that is gargled or sprayed on the back of the throat. The anesthetic numbs the throat and calms the gag reflex.

An intravenous needle is inserted into a vein in the arm if sedatives or general anesthesia will be given. Doctors and other medical staff monitor vital signs while patients are sedated.

During an ERCP, patients lie on their abdomen on an x-ray table. The doctor inserts an endoscope through the mouth, down the esophagus, through the stomach and into the duodenum. Video is transmitted from a small camera attached to the endoscope to a computer screen within the doctor's view. Air is pumped through the endoscope to inflate the stomach and duodenum, making them easier for the doctor to examine.

When the doctor locates the duodenal papilla, a blunt tube called a catheter is slid through the endoscope and guided through the papillary opening. Once the catheter is inside the papilla, the doctor injects a dye into the ducts. The dye, also called contrast medium, allows the ducts to be seen on x rays. Video X-rays, also called fluoroscopy are then taken to see the ducts and to look for narrowed areas or blockages.

Procedures to treat narrowed areas or blockages can be performed during an ERCP. Special tools guided through the endoscope and into the ducts allow the doctor to open blocked ducts, break up or remove gallstones, biopsy tumors in the ducts, or insert stents. Stents are plastic or expandable metal tubes that are left in narrowed ducts to restore the flow of bile or pancreatic juice. A kind of biopsy called brush cytology allows the doctor to remove cells from inside the ducts using a brush that fits through the endoscope. The collected cells are later examined with a microscope for signs of infection or cancer.

Occasionally, an ERCP is done after gallbladder surgery, if a surgical bile leak is suspected, to find and stop the leak with a temporary stent.

What does recovery from an ERCP involve?

After an ERCP, patients are moved to a recovery room where they wait for about an hour for the sedatives to wear off. Patients may not remember conversations with health care staff, as the sedatives reduce memory of events during and after the procedure. During this time, patients may feel bloated or nauseous. Patients may also have a sore throat, which can last a day or two.

Patients can go home after the sedatives wear off. Patients will likely feel tired and should plan to rest for the remainder of the day. Some ERCP results are available immediately after the procedure. Biopsy results are usually ready in a few days.

Eating, Diet, and Nutrition

Unless otherwise directed, patients may immediately resume their normal diet and medications after having an ERCP. The health care provider can answer any specific questions about eating, diet, nutrition, and medications.

What are the risks associated with an ERCP?

Significant risks associated with an ERCP include:

- infection
- pancreatitis (3-5% nationwide statistics)
- allergic reaction to sedatives
- excessive bleeding, called hemorrhage
- puncture of the GI tract or ducts (1 out of 1000 or 0.1% nationwide statistics)
- tissue damage from radiation exposure
- death, in rare circumstances

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When an ERCP is performed by an experienced doctor, complications occur in about 3-5% of patients and these often require hospitalization. Patients who experience any of the following symptoms after an ERCP should contact their health care provider immediately:

- swallowing difficulties
- throat, chest, or abdominal pain that worsens
- vomiting
- bloody or dark stool
- fever

Points to Remember

- ERCP is a procedure that combines upper gastrointestinal (GI) endoscopy and x-rays to treat problems of the bile and pancreatic ducts.
- Upper GI endoscopy is a procedure that uses a lighted, flexible endoscope to see and perform procedures inside the upper GI tract.
- Ducts are tubelike structures in the body that carry fluids. The bile ducts carry bile, a liquid the liver makes to help the body absorb fat. The pancreatic ducts carry pancreatic juice, a liquid the pancreas makes to help break down food.
- The common bile duct and the main pancreatic duct join before emptying their contents into the duodenum, the first part of the small intestine.
- The health care provider usually provides written instructions about how to prepare for an ERCP.
- Driving is not permitted for 12 to 24 hours after an ERCP to allow the sedatives time to completely wear off. Before the appointment, patients should make plans for a ride home.
- During an ERCP, the doctor inserts an endoscope down the esophagus, through the stomach, and into the duodenum.
- The doctor injects contrast medium into the ducts and video x-rays or fluoroscopy are taken to see the ducts.
- Special tools that slide through the endoscope allow the doctor to open blocked ducts, break up or remove gallstones, remove tumors in the ducts, or insert stents.
- Significant risks associated with an ERCP include infection, pancreatitis, allergic reaction to sedatives, excessive bleeding, puncture of the GI tract or ducts, tissue damage from radiation exposure, and, in rare circumstances, death.

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