



Laparoscopic Bile Duct Exploration

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What are common bile-duct stones?

Common bile-duct stones are gallstones that move out of your gallbladder and get stuck in your common bile duct, which is a tube that connects your gallbladder to your intestines. Gallstones are 'stones' that form in your gallbladder. They are common and can run in families. The risk of developing gallstones increases as you get older and if you eat a diet rich in fat. Your doctor has recommended an operation to remove the gallstones along with your gallbladder (cholecystectomy). However it is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you make an informed decision.

If you have any questions that this document does not answer, ask your surgeon or the healthcare team.

How do Common bile-duct stones happen?

Your liver produces a fluid called bile that is concentrated by, and stored in, your Gallbladder (see figure 1). When you eat your food, your gallbladder empties bile into your intestines to help digest fats. Stones can develop in the bile particularly if you eat a diet rich in fat. The stones can move into your common bile duct or they can form in your common bile duct because of an infection.

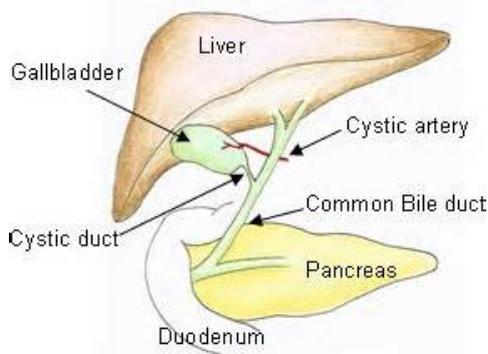


Figure 1 – The Gallbladder and surrounding structure

Common bile-duct stones can cause jaundice (your eyes and skin turning yellow), serious infection of your bile ducts (cholangitis) or inflammation of your pancreas (acute pancreatitis). These problems can be serious and even cause death.

What are the benefits of surgery?

You should be free of pain and able to eat a normal diet. Surgery should also prevent the serious conditions that common bile-duct stones can cause. Your body will function perfectly well without a gallbladder.

Are there any alternatives to surgery?

An ERCP (endoscopic retrograde cholecho pancreatogram) is a procedure to examine your bile duct using a flexible telescope and dye (colourless contrast fluid). If there are gallstones in your bile duct, they can be removed using a sphincterotomy (a cut in the papilla, which is a small circle of muscle). If the gallstones are large, a stent (tube) can be inserted in your bile duct to help relieve jaundice. It is possible to dissolve the stones or even shatter them into small pieces but these techniques involve unpleasant drugs that have side effects and a high failure rate. The gallstones usually come back. Antibiotics can be used to treat any infections of your gallbladder and common bile duct. Eating a diet low in fat may help prevent attacks of pain. However these alternatives will not cure the condition and symptoms are likely to come back.

What will happen if I decide not to have the operation?

About 1 in 5 people will not have any symptoms. If you have already had symptoms, it is likely that these will continue from time to time. There is a small risk of life-threatening complications.

What does the operation involve?

Common bile-duct stones are treated surgically by removing your gallbladder so that no more stones will

be made, and by removing any stones in your common bile duct. The healthcare team will carry out a number of checks to make sure that you have the operation you came in for. The operation is performed under general anaesthetic and usually takes one to two hours. You may also have injections of local anaesthetic to help with the pain after the operation. You may be given antibiotics during the operation to reduce the risk of infection. Your surgeon will first need to find out where the stones are in your common bile duct. They may inject dye into your common bile duct and take an x-ray. Your surgeon may also use a telescope to look inside the duct. If your surgeon finds any gallstones in the duct, they will remove them through a small cut, or by using a wire basket, or by using a tube with an inflatable balloon at the end (balloon catheter). To allow bile to drain out, your surgeon may need to insert one end of a special T-shaped tube into your common bile duct, with the other end coming out through your skin. Your surgeon will remove your gallbladder. They will free up and secure your gallbladder duct (cystic duct) and artery, separate your gallbladder from your liver, and remove it.

Laparoscopic (keyhole) surgery

Your surgeon will use laparoscopic (keyhole) surgery as this is associated with less pain, less scarring and a faster return to normal activities. Your surgeon will make a small cut on or near your belly button so that they can insert an instrument into your abdominal cavity and inflate it with gas (carbon dioxide). They will make several small cuts on your abdomen so that they can insert tubes (ports) into your abdomen. Your surgeon will insert surgical instruments through the ports along with a telescope so that they can see inside your abdomen and perform the operation (see figure 2)

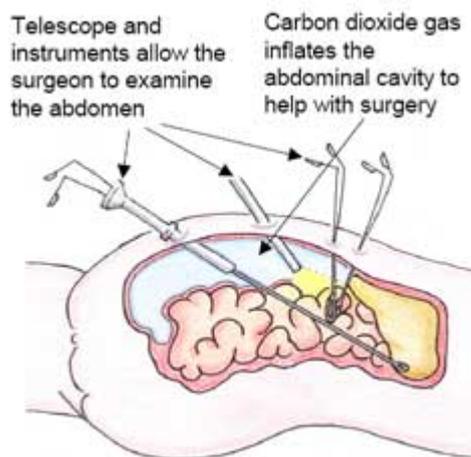


Figure 2 – the technique for laparoscopic surgery

For about 1 in 20 people it will not be possible to complete the surgery using keyhole surgery. The operation will be changed (converted) to open surgery, which involves a larger cut usually just under

your right ribcage. Your surgeon will remove the instruments and close the cuts.

What should I do about my medication?

Let your doctor know about all the medication that you take and follow their advice. This includes all blood-thinning medication as well as herbal and complimentary remedies, dietary supplements and medication that you can buy over the counter.

What can I do to make the operation a success?

If you smoke then stopping smoking several weeks or more before the operation may reduce your risk of developing complications and will improve your long-term health. Try to maintain a healthy weight. You have a higher risk of developing complications if you are overweight. Regular exercise should help prepare you for the operation, help you recover and improve your long-term health. Before you start exercising, ask you GP for advice. You can reduce the risk of infection in a surgical wound by not shaving or waxing the area where the cut is likely to be in the week before the operation, have a bath or shower on the day of or the day before your operation and by keeping warm around the time of the operation. Please let the nursing team know if you are feeling cold.

What complications can happen?

The healthcare team will try to make to operation as safe as possible but complications can happen. Some of these can be serious and even cause death (risk: 1 in 500). When you are recovering you need to be aware of the symptoms that may show you have a serious complication. You should ask your doctor if there is anything that you don't understand. Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

1. Complication of anaesthesia

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2. General complications of any operation

- Pain. The healthcare team will give you medication to control the pain and it is important that you take it as you are told to so you can move about and cough freely. After keyhole surgery, it is common to have some pain in your shoulders because a small amount of carbon dioxide gas may be left under your diaphragm. Your body will naturally absorb the gas over the next 24 hours, which will ease the symptoms.
- Bleeding during or after the operation. You may need a blood transfusion or another operation.
- Unsightly scarring of your skin.
- Developing a hernia in the scar, if you have open surgery, caused by the deep muscle

layers failing to heal. This appears as a bulge or rupture called an incisional hernia. If this causes problems you may need a further operation.

- Infection in the wound. It is usually safe to shower after 2 days but you should check with healthcare team. Let the team know if you get a high temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may need another operation.
- Blood clot in your leg (deep-vein thrombosis DVT) this can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medication, or special stockings to wear. Let the healthcare team know straightaway if you think you may have a DVT.
- Blood clot in your lung (pulmonary embolus) if a blood clot moves through your bloodstream to your lungs. If you become short of breath, feel pain in your chest or upper back, or if your cough up blood, let the healthcare team know straight away. If you are at home, call an ambulance or go immediately to your nearest Emergency department.

Specific complications of this operation

Keyhole surgery complications

- Developing a hernia near one of the cuts used to insert the ports (risk 1:100). Your surgeon will try and reduce this risk by using small ports (less than a centimetre in diameter) where possible or, if they need to use larger ports, using deeper stitching to close the cuts.
- Damage to structure such as your bowel, bladder or blood vessels when inserting instruments into your abdomen (risk: less than 3 in 1,000). The risk is higher if you have had previous surgery to your abdomen. If an injury does happen you may need open surgery. About 1 in 3 of these injuries is not obvious until after the operation.
- Surgical emphysema (crackling sensation in your skin caused by trapped carbon dioxide gas), which settles quickly and is not serious)

Bile Duct exploration complications

- Retained stones in your common bile duct. Your surgeon may remove the stones during the operation or later using a flexible telescope.
- Narrowing of the common bile duct needing further treatment.

- Leaking of bile after the T tube is removed. If the bile leaks onto your skin, the problem usually settles in one or two days. However if bile leaks into your abdomen it can cause serious complications and you may need another operation.
- Allergic reaction to the equipment, materials, medication or dye. This usually causes a skin rash which settles with time. Sometimes the reaction can be serious (risk: less than 1 in 2500) or even life threatening (risk 1: 25,000). The healthcare team is trained to detect and treat any reactions that might happen. Let your surgeon know if you have any allergies or if you have reacted to any medication or tests in the past.
- Infection of your skin around the T-Tube, which usually settles when the tube is removed.
- Difficulty removing the T-tube. Sometimes the tube will need to be left in longer than usual while the stitches holding it in place dissolve.

Cholecystectomy complications

- Bowel injury, if your bladder is stuck to your gallbladder (risk: less than 1 in 500)
- Serious damage to your liver or its associated blood vessels. This is rare but you may need another operation.
- Diarrhoea because you no longer have a gallbladder to control the flow of bile into your intestines.
- Leaking of bile or stones. Your surgeon can usually deal with this at the time of surgery but you may need another operation.
- Continued pain.
- Inflammation of the lining of your abdomen (peritonitis) caused by a collection of bile or blood. Sometimes this can be caused by the T-Tube slipping out of your common bile duct.
- Continued bowel paralysis (ileus), where your bowel stops working for more than a few days causing you to become bloated and to be sick. You may need a tube (nasogastric or NG tube) placed in your nostrils and down into your bowel until your bowel starts to work again.

How soon will I recover?

In hospital

After the operation you will be transferred to the recovery area and then the ward. You should be able to go home within one or two days if you have had keyhole surgery or after four to five days if you had open surgery. However your doctor may recommend

that you stay a little longer. You need to be aware of the following symptoms as they may show that you have a serious complication.

- Pain that gets worse over time or is severe when you move, breath or cough.
- A high temperature or fever
- Dizziness, feeling faint or shortness of breath
- Feeling sick or not having any appetite (and this gets worse after the first one or two days)
- Not opening your bowels and not passing wind.
- Swelling of your abdomen
- Difficulty passing urine

If you do not continue to improve over the first few days, or if you have any of these symptoms, let the healthcare team know straight away. If you are at home, contact your surgeon or GP. In an emergency, call an ambulance or go immediately to your nearest emergency department.

Returning to normal activities

To reduce the risk of a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medication or need to wear special stockings.

The healthcare team will arrange for you to come back to the clinic after one to six weeks to have the T tube removed.

You should be able to return to work after three to four weeks depending on the extent of the surgery and your type of work.

Your doctor may tell you not to do any manual work for a while. Do not lift anything heavy for a few weeks. Regular exercise should help you return to normal activities as soon as possible. Before you start exercising, ask the healthcare team or your GP for advice. Do not drive until you are confident about controlling your vehicle and always check your insurance policy with your doctor.

The future.

You should make full recovery and be able to return to normal activities and eat a normal diet. If your pain or jaundice continues, let your doctor know.

Summary

Gallstones are a common problem. Sometimes they can move into your common bile duct or stones can form in your common bile duct. An operation to remove your gallbladder and any stones in your bile duct should result in you being free from pain and able to eat a normal diet. Surgery should also prevent the serious complications that common bile-duct stones can cause. Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about

surgery. Knowing about them will also help to detect and treat any problems early.