

## **Gallbladder removal (laparoscopic cholecystectomy)**

You may need your gallbladder removed if:

- you have gallstones that are causing pain, inflammation or infection of your gallbladder
- you have jaundice (yellowing of your skin or the whites of your eyes) caused by a gallstone blocking your bile duct
- you have inflammation of the pancreas (pancreatitis) caused by gallstones

There are two surgical techniques used to remove the gallbladder.

- Laparoscopic cholecystectomy – your gallbladder is removed through small cuts in your abdomen (tummy), using a surgical technique called keyhole surgery.
- Open cholecystectomy – your gallbladder is removed through one large cut in your abdomen, using a surgical technique called open surgery.

### **What are the alternatives to gallbladder removal?**

If you have gallstones but they aren't causing any symptoms, surgery is not usually recommended. Sometimes gallstones can be dissolved using medicines, however gallstones often come back after this type of treatment and it is therefore rarely used.

If gallstones are in your bile duct and not in your gallbladder, they can be removed by an endoscopy (ERCP). An endoscope, which is guided using X-rays, is passed via your mouth down to your bile duct. Special instruments can be inserted inside the endoscope to allow your surgeon to remove the gallstones from your bile duct. ERCP can only be used to remove gallstones if they are found in your bile ducts. If gallstones are in your gallbladder itself, you may need a cholecystectomy as well. Your surgeon will discuss any possible alternative treatments with you.

### **Preparing for gallbladder removal**

Your surgeon will explain how to prepare for your gallbladder removal. For example, if you smoke, you will be asked to stop as smoking increases your risk of getting a chest and wound infection, which can slow your recovery.

Gallbladder removal using keyhole surgery is routinely done as a day-case procedure but you may also need to stay overnight in hospital. Gallbladder surgery is carried out under general anaesthesia. This means you will be asleep during your operation. You will be asked to follow fasting instructions. This means not eating or drinking, typically for about six hours beforehand. However, it's important to follow your surgeon's advice.

Your surgeon will discuss with you what will happen before, during and after your procedure, and any pain you might have. This is your opportunity to understand what will happen, and you can help yourself by preparing questions to ask about the risks,

benefits and any alternatives to the procedure. This will help you to be informed, so you can give your consent for the procedure to go ahead, which you will be asked to do so by signing a consent form.

You may be asked to wear compression stockings to help prevent blood clots forming in the veins in your legs. You may need to have an injection of an anticlotting medicine called heparin as well as, or instead of, wearing compression stockings.

### **What happens during gallbladder removal?**

Gallbladder removal is usually done using keyhole surgery, which means your surgeon won't have to make a large cut in your abdomen. Keyhole surgery to remove your gallbladder usually takes between 30 and 90 minutes. Your surgeon will usually make four small cuts in your abdomen. He will inflate your abdomen using harmless carbon dioxide gas to create space and to make it easier to see your internal organs. Your surgeon will then pass a laparoscope (a long, thin telescope with a light and camera lens at the tip) through one of the cuts to view your internal organs on a monitor.

Your surgeon will then insert specially adapted surgical instruments through the other cuts so that he can remove your gallbladder. During the operation your surgeon may take X-rays to check there are no gallstones in the bile duct.

At the end of the operation, the carbon dioxide gas is allowed to escape and the instruments are removed. Your surgeon will close the wounds with stitches and cover them with a dressing.

### **What to expect afterwards**

You may need to rest until the effects of the anaesthetic have passed. You may need pain relief to help with any discomfort as the anaesthetic wears off.

If you are a day-case patient, you will usually be able to go home when you feel ready but you will need to arrange for someone to drive you home. Try to have a friend or relative with you for the first 24 hours after your surgery. Before you go home your nurse will give you some advice about caring for your healing wounds. You will be given a date for a follow-up appointment.

General anaesthesia temporarily affects your co-ordination and reasoning skills, so you must not drive, drink alcohol, operate machinery or sign legal documents for 24 hours afterwards. If you're in any doubt about driving, contact your motor insurer so that you're aware of their recommendations, and always follow your surgeon's advice.

Dissolvable stitches are used with this procedure. The length of time your dissolvable stitches will take to disappear depends on what type you have. However, for this procedure they should disappear in about two weeks.

Once your gallbladder has been removed, your body can't develop new gallstones. However, if gallstones have passed into your bile ducts and remain there after

surgery, you may still get symptoms. Gallstones that have passed into your bile ducts can be removed by ERCP.

### **Recovering from gallbladder surgery**

It usually takes between one or two weeks to make a full recovery from keyhole surgery to remove your gallbladder, but this varies between individuals, so it's important to follow your surgeon's advice.

If you need pain relief, you can take over-the-counter painkillers such as paracetamol or ibuprofen. Always read the patient information leaflet that comes with your medicine and if you have any questions, ask your pharmacist for advice. Your surgeon may give you painkillers when you're discharged from hospital.

### **What are the risks?**

As with every procedure, there are some risks associated with gallbladder removal. Ask your surgeon to explain how these risks apply to you.

### **Side-effects**

Side-effects are the unwanted but mostly temporary effects you may get after having the procedure.

Possible side-effects may include:

- shoulder pain
- abdominal pain
- diarrhoea

### **Complications**

Complications are when problems occur during or after the procedure. The possible complications of any procedure include an unexpected reaction to the anaesthetic, excessive bleeding or developing a blood clot, usually in a vein in the leg (deep vein thrombosis, DVT).

There is a chance that during the operation your surgeon may need to convert from a keyhole procedure to open surgery. He will need to make a bigger cut in your abdomen. This will only be done if it's not possible to complete your operation safely using the keyhole technique. It's likely to take you longer to recover from this type of surgery than keyhole surgery, and you will need to spend more time in hospital. The risk of conversion is around 1 in 20 operations.

Other possible complications may include:

- pain in your abdomen, bloating, wind and diarrhoea
- wound infection, or a hernia in the wound in the future (usually the belly-button wound)

- leakage of bile from your bile duct or surface of the liver (1 in 100 operations). This only occurs within the first week of surgery, and requires readmission to hospital, and sometimes a further laparoscopy, an ERCP, or insertion of a drain into the abdomen under local anaesthetic to drain off any bile that has collected
- accidental damage to your bile duct (1 in 500 operations). This may require further major surgery to be carried out, with its own risks and long-term complications
- bleeding (haemorrhage), either inside your abdomen or from a wound
- damage to other organs within the abdomen such as bowel

**Please speak to your surgeon if you have any questions or worries whatsoever.**