

# Gallstones

Keyhole surgery

**Bile is produced in the liver. It helps digest food. The gall bladder is located underneath the liver and functions as a storage space for bile until it is needed in connection with a meal. As you eat, the gall bladder contracts and expels bile into the duodenum.**

## **What is a gallstone – and why do we get them?**

A gallstone is formed in the gall bladder when the substances in bile (cholesterol, calcium and bile pigments) are imbalanced. These substances precipitate to form stones. Gallstones vary in appearance and size. They may measure from a few millimetres (called gravel) to stones of up to 2-3 cm in diameter. Doctors do not know exactly why some people develop gallstones. Even though there is no clear evidence that the condition is hereditary, it is not uncommon for several members of the same family to suffer from gallstones.

## **Symptoms of gallstones**

Stones in the gall bladder can cause violent bouts of pain resembling colic, which may last for several hours. The pain is localised under the lower edge of the rib cage, sometimes radiating towards the spine. Attacks are often

accompanied by nausea and vomiting. Some gallstone patients develop jaundice if one or more gallstones move(s) down into the deep bile ducts, causing a blockage.

In most cases gallstones remain in the gall bladder.

## **Treatment of gallstones**

There is no effective medical treatment for gallstones. Gallstones are therefore removed by means of keyhole surgery, where gallstones and the gall bladder are removed. Most patients' symptoms disappear when their gall bladder is removed.

In rare cases gallstones may form later in the bile duct. This is probably due to gravel passing through from the gallbladder to the bile duct, where it subsequently grows to form gallstones.

# Preliminary examination

Before surgery, you will be invited to attend a preliminary examination by our specialist in gastro-intestinal surgery. You explain your symptoms. The specialist will examine you and review the results of blood tests and ultrasound scanning (if any). In some cases, more examinations will be required to rule out the possibility of other disorders.

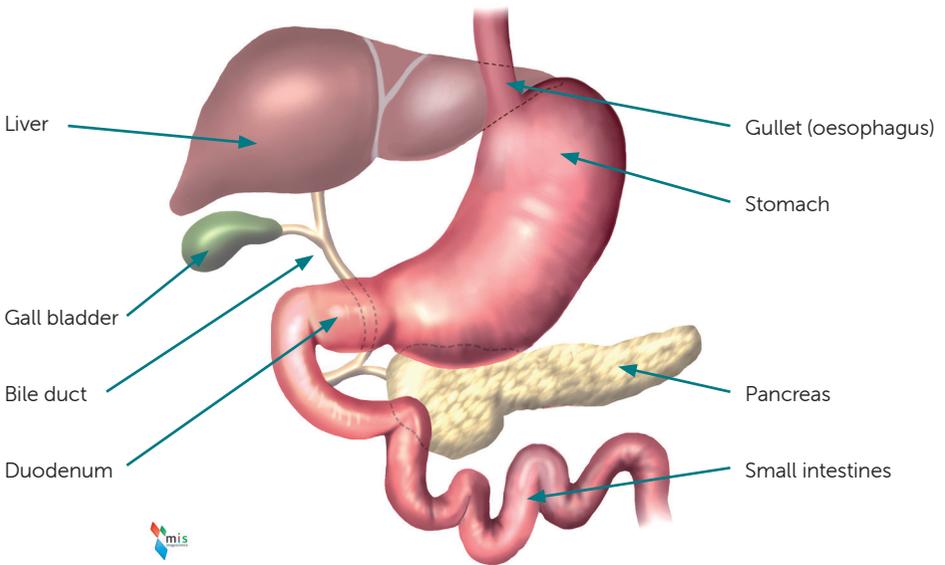
The specialist will then let you know of the treatment options available to you. The specialist will discuss whether a surgical procedure is the best treatment for you.

You will be informed of operative and post-operative procedures, and potential side-effects and complications associated with the surgery.

You help determine the date of surgery to fit in with your plans.

## Prognosis

In the vast majority of cases, when the gall bladder – an organ you can easily do without – is removed, the symptoms will disappear. Patients who have had their gall bladder removed very seldom suffer from gallstones again.



Without the gall bladder, there is a more constant flow of bile into the intestines and this does not usually have any effect on the digestion. Some patients get more frequent diarrhoea.

## Preparation

Before surgery, we recommend that you read this brochure carefully, along with "General guide for surgical patients".

### Fasting

The surgery is performed under general anaesthetic, which means that you must fast before the surgery.

### Pause from medication

See about this in the booklet "General guidance regarding your surgery" or "Regular medication in connection with surgery."

### Bathing

On the day of your operation, you must shower. Make sure that you wash your navel well. Do not apply cream or lotion after your shower.

## Same-day surgery (out-patients)

The operation will be performed as same-day surgery. You can expect to be discharged on the same day just a few hours after surgery.

## Open and keyhole surgery

The surgical procedure lasts about 1½ hours.

Air is pumped into the abdominal cavity via a fine-gauge cannula, raising the abdominal wall to create enough space to operate in the abdominal cavity.

In keyhole surgery, four small incisions are made in the abdominal wall: One under the navel and three higher up to the right of the stomach. A fifth incision may be necessary on the left of the stomach. Four small pipes (½-1 cm in diameter) are inserted through the peritoneum (abdominal wall). A camera is inserted into one of the pipes. The camera is connected to a TV screen. The specialist has a very clear picture of the gall bladder and other organs in the abdominal cavity.

The procedure is performed using long instruments inserted into the remaining pipes. The gall bladder is removed from the underside of the liver. The small exit duct from the gall bladder and the blood supply to the gall bladder are closed with clips and then separated. The gall bladder is then removed through the largest of the incisions (the incision close to the navel).

Sometimes, a drain (a fine plastic pipe) is inserted to remove excess blood and fluids from the abdominal cavity.

Antibiotics are administered in connection with the procedure to prevent inflammation in the wounds.

A local anaesthetic will be applied to the wounds at the end of the procedure.

The skin is stitched and closed with clips or sutures. Absorbable sutures may be used.

### **Open surgery**

In isolated cases, the surgery cannot be performed as keyhole surgery. In this case, while the patient is still under anaesthetic, open surgery will be performed, with a larger incision (about 10-15 cm long) under the lower edge of the rib cage on the right-hand side.

After open surgery, the patient must remain in hospital for slightly longer than after keyhole surgery.

## **After surgery**

After surgery the specialist and nurse will talk to you about what happens next and any precautions you need to observe after the operation.

Before you are discharged, you will be given an injection of anticoagulant medicine to reduce the risk of inflammation in veins and arteries (thrombophlebitis) and blood clots (thromboembolism).

You may need to take painkillers after surgery. You are welcome to talk to the nurse about this.

## **After discharge**

### **Pain**

You should expect to feel mild to moderate pain after surgery. You may take ordinary, non-prescription painkillers. After keyhole surgery, you should expect to feel pain in your right shoulder for a day or two. This is due to air having been pumped into the abdominal cavity.

### **Bandages**

Do not remove the bandages until 24 hours after surgery. If the bandages are soaked in blood or fluid, they must be replaced. When the wounds are dry after a couple of days, the bandages may be removed.

### **Bathing**

The day after surgery (24 hours later) you may take a shower without bandages on your wounds. Swimming pool and bathtub: Wait until the wounds have healed.

### **Diet**

You can eat and drink normally.

### **Daily activities**

You can resume regular daily activities from the day after surgery.

### **Restrictions**

Avoid heavy lifts during the first week.

## **Time off work**

You may return to work 2-4 days after surgery, but later if you have any pain – or if your work involves strenuous physical activity. As a general rule, you may do what you like as long as it does not cause you any pain. If you have undergone open surgery, you should expect to remain off work for 2-3 weeks.

## **Removal of clips/stitches and post-operative care**

Your GP may remove stitches or clips 8-10 days after surgery. If the wound is clipped, special pincers will be supplied for this purpose

If you have been stitched with absorbable sutures, the sutures do not have to be removed.

No further out-patient care is required.

# **Potential side-effects and complications**

## **Infected wound**

Superficial inflammation may occur in a wound. About 2% of patients experience this. The clips/stitches may have to be removed in order to remove infected tissue.

## **Bile leaks**

Following surgery, in fewer than 1% of patients, bile is found to leak from the tiny exit in the abdominal cavity. The leak causes increasing abdominal pain, discomfort and (possibly) fever.

The patient has to be admitted to hospital for treatment. Often a small plastic drain will be inserted in the bile duct. This can be performed using an endoscope with a camera. The endoscope is inserted into the gullet and down to the bile ducts. This procedure is known as an ERCP.

## **Damage to the bile duct**

On very rare occasions the bile duct may be damaged during surgery to remove the gall bladder. If so, the patient must undergo further surgery.



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