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**PATIENT INFORMATION:
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What are gallstones?

Gallstones are 'stones' which form in the gallbladder. They are fairly common and can run in families. The possibility of developing gallstones increases with age and in patients who eat a diet rich in fat.

You have been advised to have an operation to remove the gallstones and gallbladder. However, it is your decision to go ahead with the procedure or not. This leaflet will provide information to assist you in making an informed decision. If you have any questions, please ask.

How do gallstones happen?

The liver produces a fluid called bile which is concentrated by and stored in the gallbladder. When you eat, the gall bladder empties bile into the intestine to help to digest any fats. Stones can develop in the bile, especially if you have a fatty diet.

In some patients, gallstones can cause severe symptoms, with repeated episodes of abdominal pain being the most common. The pain is due to either the stones blocking the cystic duct and stopping the gall bladder from emptying (biliary colic) or because of inflammation of the gallbladder (cholecystitis). The pain is sometimes severe enough to necessitate admission to hospital.

If the stones move out of the gall bladder and into the common bile duct they can cause jaundice (yellow colouration of the skin), severe infection of the bile duct (cholangitis) or inflammation of the pancreas (acute pancreatitis). These complications can be serious and may even cause death.

What are the benefits of the surgery?

You should be free from pain and able to return to a normal diet. Surgery should also stop the serious complications that may be caused by gallstones.

What are the alternatives to surgery?

Surgery is recommended as it is the only reliable way to treat the condition.

It is possible to dissolve the stones or even shatter them into tiny pieces but these techniques have unpleasant drugs that cause side effects and have a high failure rate. The gallstones usually return.

Antibiotics can be used to treat infections of the gall bladder and a low fat diet can help to prevent attacks of abdominal pain.

However, without surgery the symptoms are likely to return.

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

Your gallstones may not cause you any symptoms. If you have already suffered with symptoms it is likely that these will return from time to time. There is a small risk that you may develop life-threatening complications.

What does the operation involve?

Gallstones are treated surgically by removing the gallbladder containing the gallstones (cholecystectomy). Your body will function perfectly well without a gallbladder and new stones will not be made.

The operation

We will carry out a number of checks to ensure you have the operation you came in for. You can help by confirming to us your name and the operation you are having. The procedure is performed under a general anaesthetic and usually takes about one hour. You may also be given an injection of local anaesthetic to help with the pain after your surgery. You may be given antibiotics during the procedure to reduce the risk of infection. We will free up the gall bladder duct (cystic duct) and artery. We may inject a colourless fluid (contrast agent) into the common bile duct and take an x-ray. We would then separate the gallbladder from the liver and remove it. If the x-ray shows gallstones in the common bile duct, we may remove the stones either during the operation or later using a flexible telescope.

Laparoscopic (keyhole) surgery

We will normally use the keyhole method to remove your gallbladder, as this is associated with less pain, scarring and a quicker recovery to normal activities. We will make a small cut in or near your umbilicus (belly button) so that we can insert an instrument to inflate the abdominal cavity with gas (carbon dioxide). We will then make several small cuts on your abdomen to insert tubes (ports) into your abdomen. We will then place instruments through the ports along with a telescope so that we can see into your abdomen and perform the operation. To complete the procedure, we will remove the gallbladder through one of the small cuts and then close the cuts. In about 1 in 20 people it is not possible to complete the operation using the keyhole technique. If this happens the operation will be converted to an open procedure.

Open Surgery

The operation itself is the same but it is performed through another bigger cut, usually just under the right ribcage.

What should I do about my medication?

You should let us know about all the medication you are on and follow our advice. This includes herbal remedies and medication to control diabetes and blood pressure. If you are on beta-blockers, you should continue to take them as normal. You may need to stop taking Clopidogrel, Aspirin or Warfarin before your procedure but you will be advised when and if any other treatment is required at the Pre-Admission appointment.

What can I do to help make the operation a success?

If you smoke, stopping smoking several weeks or more before the procedure may reduce your risk of complications and will improve your health in the long term. You should endeavour to maintain a healthy weight as the risk of developing complications is higher if you are overweight. Regular exercise should help prepare you for the procedure and will help you recover and will improve your general health long term. Before you start exercising, you should seek advice from your GP. You can reduce the risk of infection in your surgical wound. In the week prior to the operation do not shave or wax the area where a cut is likely to be made. Have a bath or shower either the day before or on the day of your procedure. Keep warm around the time of your procedure, let a member of staff know if you are cold.

What are the complications?

We will endeavour to make your procedure as safe as possible. However, complications can happen and some of these can be serious and could even cause death. Using the laparoscopic technique means that it is more difficult for your surgeon to notice complications that may arise during the procedure. When you are recovering, you need to be aware of the symptoms that may show you have a serious complication. If there is anything you do not understand you should ask. The numbers which relate to risk are based on studies of people who have had this procedure. We may be able to advise you if the risk of a complication is higher or lower for you. Possible complications are:

1. **Complications of anaesthesia**, Your anaesthetist will discuss with you the possible complications of having an anaesthetic.
2. **General complications of any operation**
 - ❖ **Pain**, which happens with every operation. We will try to reduce your pain, we will give you medication to control the pain, it is important that you take it as advised so that you can move about and cough freely. After a laparoscopy it is common to have some pain in your shoulders because a small amount of gas may be left under the diaphragm. Your body will normally absorb the gas naturally over the next 24 hours, this will ease the symptoms.
 - ❖ **Bleeding** during or after surgery. Rarely, a blood transfusion or another operation is needed.
 - ❖ **Infection of the surgical site** (wound). It is normally safe to shower 48 hours after surgery. However, you should check with a member of the healthcare team. Let us know if you have a 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 a further operation.
 - ❖ **Unightly scarring** of the skin, particularly if the wound becomes infected.
 - ❖ **Hernia formation in the scar**, if you have open surgery, this may be caused by the deep muscle layers failing to heal. This appears as a bulge or a rupture called an incisional hernia. If this causes problems, you may need a further operation to correct it.
 - ❖ **Blood clots** in the legs (deep vein thrombosis – DVT), which can travel through the bloodstream to the lungs (pulmonary embolus), making breathing difficult. We will assess your risk. You will be encouraged to get out of bed soon after surgery and may be given injections, medication or special stockings to wear.
3. **Specific complications of this operation**
 - a) **Laparoscopic complications**
 - **Damage to internal structures** such as the bladder, bowel or blood vessels when placing instruments into the abdomen (risk: less than 3 in 1,000). The risk is higher in patients who have had previous surgery to the abdomen. If an injury does occur, you may need open surgery, which will involve a much bigger cut. About 1 in 3 of these injuries is not obvious until after surgery
 - **Developing a hernia near one of the cuts used to insert the ports** (risk: 2 in 10,000). We will try to reduce this risk by using small ports (less than 1cm in diameter) where possible or if we

need to use larger ports, using deeper stitching techniques to close the cuts.

- **Surgical emphysema** (crackling sensation in the skin due to trapped gas) this will settle quickly and is not serious.

b) Cholecystectomy complications

- **Leaking of bile or stones** Normally your surgeon can deal with this at the time of your operation, but you may need a drain to be placed or further surgery.
- **Retained stones** in the common bile duct. We may remove the stones during the operation or later using a flexible telescope
- **Persistent pain,**
- **Diarrhoea.** This can sometimes happen because you no longer have a gallbladder to control the flow of bile into your intestines.
- **Inflammation** in the abdomen (peritonitis) due to a collection of bile or blood
- **Bile duct injury,** which is potentially serious (risk: 1 in 200). You may need further surgery to correct the problem.
- **Bowel injury** (risk: less than 1 in 500). This can occur if the bowel is stuck to the gallbladder.
- Serious **damage to the liver** or its associated blood vessels, which is rare. You may need further surgery to correct the problem.

If there is anything you do not understand or requires further clarification please let us know.

How soon will I recover?

In hospital

After the procedure you will be moved to the recovery area and then to the ward. You should be able to return home the following day. However, we 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 breathe, cough or move
- * A fever or high temperature
- * Dizziness, feeling faint or short of breath
- * Feeling sick or not having any appetite (and this gets worse after the first one to two days).

If you do not continue to improve over the first few days after your surgery or if you have any of these symptoms, please let us know straightaway. If you are at home, contact us or your GP. In an emergency, go to your nearest Accident and Emergency Department or call an ambulance.

Returning to normal activities

To reduce the risk of developing a blood clot, make sure you carefully follow the instructions provided if you have been prescribed drugs or have to wear compression stockings. If you develop pain, swelling or redness in your leg, or if the veins near the surface of your leg appear larger than normal, you may have a DVT. Let your doctor know immediately. If you

become short of breath, feel pain in your chest or upper back, or if you cough up blood, you may have a pulmonary embolism. You should go to your nearest Accident and Emergency Department or call an ambulance.

You should be able to return to work after two to four weeks, but this may vary depending upon the extent of your surgery and your type of work.

You may be advised not to do any manual work at first and you should avoid heavy lifting for a few weeks.

Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, you should ask seek advice from your General Practitioner.

Do not drive until you are confident about controlling your vehicle and always check your insurance policy and with your doctor.

The future

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

Summary

Gallstones are a common problem. Surgery to remove your gallbladder should result in you being free of pain and able to eat a normal diet. Surgery should also prevent the serious complications that can be caused by gallstones.

Surgery is usually safe and effective. Complications can occur and you need to be aware of them to help you make an informed decision about the procedure, being aware of them can also help detect and treat any problems early.

This leaflet is for information only and should not replace advice that your relevant healthcare professional would give you. Please keep this information and use it to help you if you have any further questions or queries.