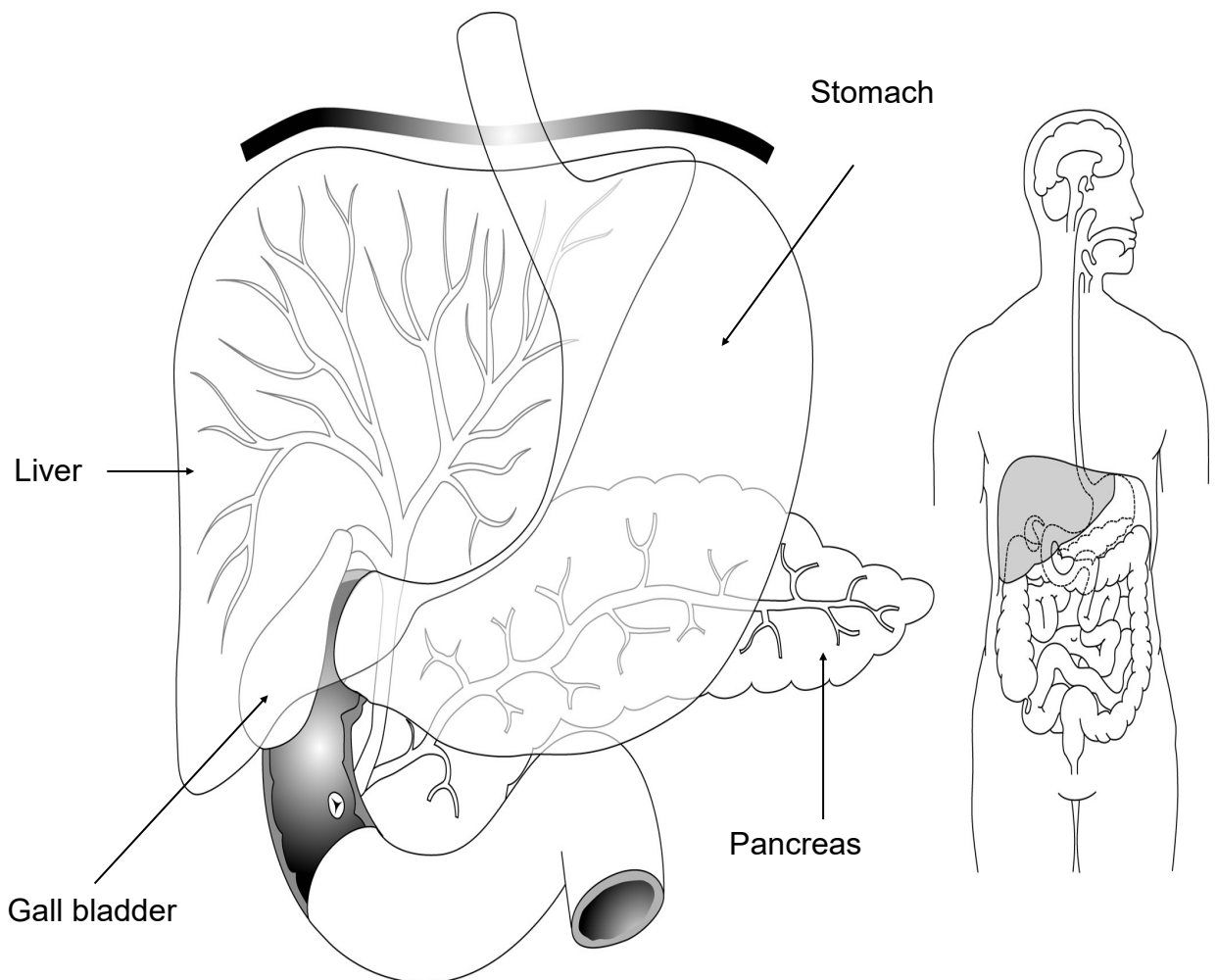


# Laparoscopic surgery for liver cancer

Hepatobiliary and Pancreatic Services  
Information for Patients

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## Introduction

The aim of this booklet is to help you understand more about laparoscopic liver surgery. There is a glossary at the end of the booklet where words that you may be unfamiliar with are explained. Words in **bold** type can be found in the glossary.

Your surgeon has recommended that you have your liver examined and, in some cases, that part of your liver is removed. This is usually done by laparoscopic (keyhole) surgery. This type of operation is routine. However not all patients are suitable for this type of operation and some require a conventional, 'open' operation.

A procedure known as microwave ablation (see page 3) may also be carried out using the laparoscopic method.

## Where is my liver and what does it do?

Your liver is situated on the right hand side of your body, tucked under the lower ribs and is your body's largest organ.

Its functions include:

- producing **bile** - a fluid passed into the gut to help with fat digestion and make cholesterol soluble. **Bile** contains bile salts and **bilirubin**
- converting food into energy
- fighting infections within the body
- inactivating and destroying harmful substances, such as toxins and drugs
- producing proteins and enzymes, which play a major role in blood clotting
- removing waste products from the body.

## What is cancer?

The body normally works on the principle that as once cell dies, it is replaced. However, cancer cells are cells that grow and do not die. These cells then form new abnormal cells, which form a tumour. These cells can spread to nearby tissues and other organs.

## What is liver cancer?

Liver cancer can start from the cells in the liver, and this is known as primary liver cancer. More commonly though, the cancer cells spread from elsewhere. This is known as secondary liver cancer.

## What treatments are available?

Liver cancer may be treated by surgery, microwave ablation or chemotherapy. This booklet is about laparoscopic surgery and microwave ablation.

## What is laparoscopic liver surgery?

This is a 'keyhole' operation to examine or remove part of your liver. You will have a general anaesthetic and the operation can take between 30 minutes and two hours, depending on the operation necessary for you.

The operation is performed through small cuts made in your abdomen. One of these will be in the region of your navel. Three, or more, other tiny cuts will be made in your upper abdomen. These cuts are called port sites. Carbon dioxide gas is put into your abdomen to give the surgeon a clear view of your liver during the operation. Hollow tubes are placed into the cuts and through these your surgeon passes instruments to perform the operation. The operation is viewed on a large television screen within the theatre room.

During the procedure, the liver is examined and biopsies (small pieces of tissue) can be taken if necessary. Any biopsies taken will be sent to the laboratory to be examined. The results may take about a week to come back.

An ultrasound probe can also be placed on the liver to give further pictures of your liver and the **ducts** associated with it. This can give better information than an external ultrasound scan.

If you need to have part of your liver removed, this will be taken out through the hole in your navel. Sometimes your surgeon will also need to remove your gall bladder.

## What is microwave ablation?

This is a laparoscopic procedure that uses heat to destroy tumours. A small probe is placed on the diseased area, under ultrasound guidance. Microwave energy is then delivered to destroy the abnormal cells.

## What are the benefits of laparoscopic surgery?

If you have laparoscopic surgery, rather than 'open' surgery

- you will not need a large cut
- you should experience less pain
- there is less risk of infection
- you will need a shorter hospital stay
- you should have a shorter recovery time
- you should have less wound problems.

## What are the risks of laparoscopic surgery?

Laparoscopic surgery is considered a very effective and safe procedure. However, although most patients do not have any problems associated with the operation, there are some specific risks and complications you should be aware of:

**Bile leak** - in some cases a small amount of bile may leak into the abdomen following surgery. This may cause pain, nausea and a fever. In very rare cases an operation may be required to repair the leak.

**Conversion from keyhole to open surgery** - occasionally the surgeon is not able to complete the operation by keyhole surgery. If this is the case, a bigger cut will be made across the top of your abdomen. This is usually carried out if your surgeon feels the operation cannot be performed safely using the laparoscopic technique.

**Damage to your intestines** - if you have had previous operations on your abdomen, these may have caused internal scarring and may make the keyhole operation more difficult. Occasionally, the intestines (small or large bowel) can be damaged because of this.

**Deep Vein Thrombosis (DVT)** - this is a blood clot in the lower leg. Precautions are taken to reduce this risk. You will be given a small injection in your abdomen before your operation to help thin your blood. You will also have to wear special compression stockings. After your operation, you will be informed when you can get up and about, and will be encouraged to do so.

**Chest infection** - if you smoke, stopping about two weeks before your operation will help reduce the risk of an infection occurring. Also, after your operation, getting up and about as soon as you feel able is very important.

**Port site hernia** - occasionally a small weakness may remain in one of the cuts made in the abdomen. This could allow a hernia to develop, which may need an operation in the future.

**Wound infection** - there is a risk that your wound may become infected, and this may require a course of antibiotics.

## Preparing for your operation

Before your admission you will be seen in the pre-assessment clinic. It is very important that you attend. If you do not attend, your operation may be postponed or cancelled.

At this clinic a member of the nursing team will see you, to check that you are fit for your operation. They will also be able to explain about the operation and answer any questions you may have. You will also be seen by a doctor who will examine you and may organise for you to have some tests.

At the pre-assessment clinic you will also be routinely tested for the infection MRSA (Methicillin Resistant Staphylococcus Aureus). This is a type of bacteria that is resistant to some antibiotics.

If you are taking any medicines please bring them to your pre-assessment appointment. You will be advised if you need to stop taking any of your medicines before your operation. **If you are taking any tablets to thin your blood, such as aspirin or warfarin, it is important that you tell us as soon as possible.** Please bring any medicines you are taking into hospital with you when you are admitted.

If you are taking the oral contraceptive pill, you may be advised to stop this four to six weeks before your operation. This is due to the slight increased risk of a blood clot (DVT), forming. **You will need to use an alternative method of contraception during this time.**

## Preparing for you operation (continued)

We will send you a letter confirming the date of your admission, and details of the ward you will be admitted to. You will also be advised when you should stop eating and drinking before your operation. If you are unsure please ask during your pre-assessment appointment.

The following points should be noted before coming into hospital:

- If you smoke, it is recommended that you stop around two weeks beforehand. You should also be aware that smoking is not allowed anywhere in the hospital buildings or within the grounds.
- Do not bring any valuables into hospital, as we cannot be held responsible for any loss or damage.
- Please remove all jewellery. You may wear a wedding ring.
- Take a bath or shower before coming into hospital.
- You will also be asked to shower and wash your hair before you go down to theatre, using a special body wash. This is to reduce your risk of MRSA infection.
- There is no need to shave the operation area. If necessary this will be done in the operating theatre.
- Bring in an overnight bag with nightclothes and wash bag.
- Have a contact number for the person who is going to take you home.

## Consenting to surgery

Before any operation is performed, your doctor will need to have your consent. This is a written form that you and your doctor will sign together.

Your doctor will explain the purpose of the operation, and tell you if it is intended to remove any of your liver during the procedure. However you also need to be aware that sometimes it is only during the operation that the spread of the disease is fully apparent. This may mean that the cancer has become fixed to important blood vessels making a complete removal of the growth too dangerous.

You need to be fully aware of the operation that you are going to have done. If you have any doubts or questions, you should speak to your doctor.

## After your operation

Depending on the type of liver operation you have had, you may be taken to the Intensive Care Unit for close monitoring following your operation. Otherwise you will spend a short time in the theatre recovery area, before being returned to the surgical ward.

**Oxygen** - you may be given oxygen until you are fully awake. This is given through a mask which is placed over your nose and mouth.

**Intravenous infusion (drip)** - you may have a 'drip' going into the back of your hand. This is routine and only temporary until you are drinking enough fluid.

**Wound drain** - you may have a wound drain in place. This is a tube to help drain fluid from the wound. This will be removed before you are discharged home.

## After your operation (continued)

**Urinary catheter** - this is a tube which goes into your bladder and drains your urine into a bag. The nursing staff will check that you are passing enough urine and that you are receiving enough fluids.

**Pain control** - it is very important that your pain is well controlled so that you are not frightened to move and cough to help keep your chest clear. After a big operation there are two main types of pain control used:

- **Epidural** - an epidural delivers strong pain killers through a fine tube that goes into your back. The nurses will monitor you regularly, and ask you if you have pain or if you feel sick or drowsy. A specialist nurse from the pain team will see you every day to check on your progress.
- **Patient Controlled Analgesia (PCAS)** - this is a device attached to the drip. You will have a button which, when pushed, will deliver some pain relief directly into your veins. The pump has been set up so that you cannot use too much. A nurse will perform regular checks to make sure you do not feel too drowsy or sick.

As you begin to recover the above forms of pain relief will be replaced by other methods of pain relief.

You may experience some shoulder pain and/or lower back pain. This is caused by the gas that was put into your abdomen during the operation, which presses under the rib cage. Getting up and about as soon as possible after your operation will help to relieve this, and it usually settles within 24-48 hours.

You will be prescribed painkillers to take home with you. If you are in pain it is important for you to take these according to the instructions on the packet. It is much better to keep pain under control than to try and treat it when it has become unbearable.

- **Sickness** - occasionally patients feel sick after a general anaesthetic. Please inform the nurse looking after you if you feel sick, so you can be given medicine to help relieve this.
- **Wound care** - you will have small plasters over your wounds, and you will be advised by the ward staff when these can be removed.

You may have a shower when you are at home. It is perfectly safe for water to splash onto the wounds in the shower, but if you take a bath, ensure the water is shallow to avoid soaking the wounds. Afterwards gently pat the skin dry around the wounds with a clean towel.

The wounds may itch and there may be bruising. This is quite normal and will settle in the same way as any other bruise.

A small number of people develop a wound infection after the operation. The signs of infection are redness, swelling, heat, leaking fluid, smell or tenderness around the wound edges. If you think your wounds are infected, please contact your GP as you may need antibiotics. Occasionally, the pus has to be released from an infected area by a further procedure.

If you have stitches that need to be removed, this will be arranged before you leave hospital.

- **Getting up and about** - it is very important to get up and about as soon as possible after your operation. You should have a nurse with you the first time you get out of bed, as you may feel dizzy. When you go home you should continue to be active, doing a little bit more each day.

## Going home

You should not compare your recovery with other people who have had the same operation. We are all different and recover at different rates.

Once you have left hospital, if you experience any of the following symptoms:

- temperature or fever
- swollen abdomen
- jaundice (yellowing of the eyes or skin - this may be associated with severe itching, dark urine and pale stools)
- severe abdominal pain
- severe or uncontrolled vomiting

please contact us as soon as possible, using the details at the back of this booklet.

**Tiredness** - most people feel tired for several days, sometimes weeks, after their operation. Do not fight the tiredness, rest if you can. Do not expect too much too soon.

**Work** - your consultant will advise you on when you may be ready to start work again. If you require a sick note then please ask the ward staff before you go home.

**Driving** - you should not drive for 48 hours after any general anaesthetic, but it may be a few weeks before you can drive safely (you should be able to perform an emergency stop). The first time you drive have somebody in the car with you in case you feel unwell. It is also advisable to contact your insurance company, to check their rules about driving following surgery.

**Sex** - you may resume normal sexual activity as soon as you feel comfortable.

**Exercise** - usually after two weeks you can start gentle exercise, gradually building up to your normal routine.

**Diet** - there are no restrictions on diet and you can start a normal diet as soon as you feel ready to eat. However, some people find that, following liver surgery, they can only manage to eat small amounts to begin with. You may find it better to eat small amounts regularly throughout the day.

## Follow-up

You will be given an appointment to come back to the outpatient department six to eight weeks following your operation. You will need a scan four to six months after your surgery to reassess your liver.

## Further treatment

This will vary according to your personal circumstances. Your surgeon will discuss your future management with the **oncologist**, who may prescribe chemotherapy for you. This is the use of anti-cancer drugs to destroy cancer cells. You may receive chemotherapy either before or after your operation, or both.

