Basingstoke and North Hampshire NHS
NHS Foundation Trust

Information about liver tumours and surgery

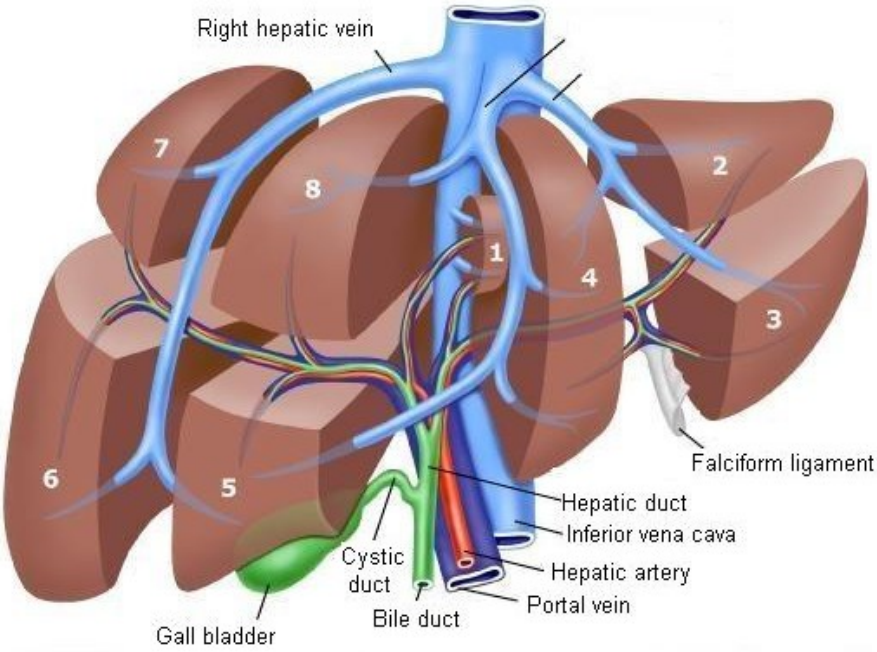
- a guide for patients and relatives

About the liver

The liver is a large organ, which lies in the upper part of the abdominal cavity, directly below the diaphragm. The liver is the largest gland, and the largest solid organ in the body, weighing approx 1.8 kgs in men and 1.3 kgs in women.

The liver is divided into 8 segments (see Fig 1); it receives its blood supply via the hepatic artery and portal vein (which transports nutrients from your intestine, or gut).

Figure 1



A brief summary of the liver's functions

- Processing digested food from the intestine.
- Controlling levels of fats, amino acids and glucose in the blood.
- Combating infections in the body.
- Clearing the blood of particles and infections including bacteria.
- Neutralising and destroying drugs and toxins.
- Manufacturing bile.
- Storing iron, vitamins and other essential chemicals.
- Breaking down food and turning it into energy.
- Manufacturing, breaking down and regulating numerous hormones including sex hormones.
- Making enzymes and proteins, which are responsible for most chemical reactions in the body, for example those involved in blood clotting and repair of damaged tissues.

Malignant tumours of the liver

Liver cancers fall into two broad groups: primary cancers which have arisen in the liver, and secondary cancers which have spread to the liver from another organ.

Primary liver cancers:

***Hepatocellular carcinoma (HCC or hepatoma*)** is a cancer which is much more likely to occur in people who have cirrhosis, particularly if it is associated with hepatitis B or C infection or haemachromatosis (a rare metabolic disorder). Small HCCs usually do not give any symptoms, but larger tumours often give upper abdominal discomfort and may be associated with signs of liver failure such as jaundice, drowsiness and fluid retention. They occasionally cause intra-abdominal bleeding.

Cholangiocarcinoma is an uncommon primary malignant tumour (cancer) of the bile ducts, which can arise in the small bile ducts within the liver or in the main bile duct draining out of the liver. It is increasing in frequency in the UK for reasons that are not fully understood. Cholangiocarcinomas are difficult to treat because they often arise in the centre of the liver and involve the main blood vessels and bile ducts entering and exiting the liver at this point. Between ten and twenty per cent (10-20%) of patients with cholangiocarcinoma are suitable for surgical resection of the tumour. The operations are often more extensive than routine liver resections and usually involve major liver resection as well as removal of the bile duct. Sometimes it is necessary to reconstruct part of the bile duct using part of the small bowel.

Secondary liver cancers:

When a cancer forms in another part of the body, a few cancer cells may break off and find their way into the bloodstream. Because the liver filters blood, any cancer cells in the blood stream have a high chance of settling in the liver to form a cancer nodule (metastasis).

Colorectal metastasis

The most common secondary cancer that we operate on after it has spread to the liver is bowel cancer (colon and rectum cancers). Historically, approximately twenty per cent (20%) of all patients with spread of this tumour to the liver were operable, though in patients who respond to chemotherapy, up to 50% may be resectable. Due to the more favourable nature of this cancer it is even sometimes possible to manage spread to the lung with surgery as well. The risks of liver surgery to the patient are relatively low, with approximately a 1 in 100 risk of death whilst in hospital for healthy patients undergoing conventional liver surgery. High-risk patients and more extensive resections have a higher attendant risk. Out of the patients that we operate on for bowel metastases, most will have a significantly prolonged life span and between a third and a half of all the patients that we treat are cured of their cancer. Without surgery the disease is effectively incurable, although chemotherapy may improve the length of survival for many patients.

Neuro-endocrine tumours (carcinoid tumours)

These are hormone-secreting secondary cancers that can arise almost anywhere in the intestines and subsequently spread to the liver. Liver secondaries are often manageable by surgery - although it is difficult to cure these tumours, it is often possible to extend and improve life by many years through a combination of surgery and other medical and radiological treatments.

Who needs liver surgery?

Liver surgery is most commonly performed for people who have malignant (cancerous) tumours in the liver. Whenever we plan to operate we always weigh up the risks of the operation against the potential benefits for the individual. These risks and benefits are different for each patient and can only be decided after reviewing all the evidence and discussing the pros and cons of surgery with you.

If we do not think that an operation has a good chance of improving the length or quality of your life we will not offer you surgery, but instead will make other suggestions about how to treat or manage your disease. Other treatment options are discussed later in this leaflet.

Pre-assessment and admission

If you come to us for surgery you will be admitted the day prior to your operation. If this is on a Monday, you will need to come to pre-operative assessment clinic the week before. This enables the doctors, anaesthetist, physiotherapist and specialist nurse to talk to you about all aspects of your operation and recovery, and to obtain your consent for the surgery. Do not hesitate to ask questions during this time.

The surgery takes about half a day, and you will spend the first night in either recovery, High Dependency Unit (HDU) or Intensive Therapy Unit (ITU). This is a general precaution, and you should return to the ward the following day so long as the doctors are happy with your progress.

Common questions before liver surgery

Is liver surgery safe?

Yes. Liver surgery has changed faster than any other branch of general surgery in the last twenty years and has now become relatively safe surgery if performed by experts in specialist units such as Basingstoke.

Would a transplant be better?

No. Most transplants are done for cirrhosis and liver failure. Although the idea of “getting rid of it all” is very attractive for cancer surgery, the problem is that the strong drugs that you need to take after a transplant to prevent rejection weaken the immune system and for most types of tumour make the cancer much more likely to come back elsewhere in the body.

Will I need a blood transfusion after the operation?

90% of patients do not require a blood transfusion after liver surgery. For routine surgery we expect the blood loss to be around 350mls.

How long will I be in hospital?

The average stay is around five to eight days after surgery. Younger, fitter patients often go home sooner. If any complications occur we keep you in until they are resolved. The distance you have to travel home will make a difference, as you have to be well enough for the journey.

Who will do the operation?

All operations are performed by a consultant liver surgeon. For some straightforward cases the consultant will take a senior trainee surgeon through the operation.

What complications can occur?

Any operation has the general risks of the anaesthetic which depend on the overall health of the patient as well as the magnitude of the surgery. There are some risks specific to liver surgery such as a leak of bile from the cut surface of the liver. This occurs in 2 or 3 people in every 100 cases that we operate on, and usually resolves without the requirement for any further surgery. A small number of patients develop a collection of infected fluid next to the surface of the liver. This is usually managed by drainage of the fluid under local anaesthetic. Occasionally after major resections patients may become slightly jaundiced, this usually resolves within a few days.

Does the liver grow back?

Yes. The liver can regenerate after surgery. The speed of regeneration depends on the quality of the liver as well as how much has been taken. It is possible to remove up to approximately 75% of an otherwise healthy liver in a fit patient.

Can I eat the day before?

Yes. You can eat normally. The ward nurses will tell you when to stop eating and drinking, usually six hours before your operation.

Will I experience much pain?

The anaesthetist will discuss your pain control with you in detail. You will have either a continuous painkiller to the wound site and a button to press, which gives a small controlled dose of morphine (patient controlled analgesia, PCA), or an epidural. After a few days these will be stopped and you will be commenced on tablets. It is important that you tell the nurses or doctors if you have any pain, as our aim is for you to be pain free.

What tubes will I have?

You will have several tubes and these all have different jobs. Some are for pain control as above; others are to drain any fluid that may collect after your operation. You will have a catheter (tube in the bladder) to drain urine to enable us to monitor your fluid balance. These tubes will be discussed with you by the doctors/anaesthetist. If you do not understand or are worried about any of them, please ask.

How big is the scar?

The shape of the cut used for this operation is horizontal following the natural shape of the curve below your ribs. Because nerve endings are cut during the operation, this may leave you with some numbness around the scar.

When will I be allowed out of bed?

You will be helped out of bed the morning after surgery, and the distance you walk will increase daily.

When will I be able to eat?

You will be able to have small drinks of water in the recovery room. Once you are back to the ward you will be allowed to drink and will gradually build up your fluid intake. Usually by the second day after surgery you should be eating a light diet.

Other treatments for liver tumours

Chemotherapy

This is the administration of strong drugs, by injection or tablet, with the intention of killing cancer cells. This is most useful for secondary liver tumours, such as colorectal cancer secondary tumours. Chemotherapy may be given a few months before surgery to shrink a tumour to make it easier to operate on, or after an operation to reduce the chance of the tumour coming back in the future. We also use chemotherapy in cases where we are unable to operate in order to try and slow down the rate of growth of the tumour and thus improve a patient's survival.

Chemo embolisation

This is a technique whereby a fine catheter (plastic tube) is inserted into one of the arteries at the top of the leg and manoeuvred up the arterial system until the tip lies inside the blood vessel supplying the liver. Sponge or fine metal coils, with or without chemotherapy, are then released into the artery supplying the liver tumour, thus partly blocking off it's blood supply and causing it to shrink. In some cases it can be effective for very large or widespread liver tumours.

Radio frequency ablation (RFA)

This technique uses radio frequency electrical energy emitted from a probe placed into the tumour. This causes the tumour to heat up and kills the cancer cells. It is very effective for some small tumours and is particularly useful for patients who also have cirrhosis. We also recommend it for patients who have small tumours but are not fit enough to withstand more major surgery. The procedure still requires a general anaesthetic in most cases.

Microwave ablation

Microwave ablation is a technique that destroys tumours using heat. The procedure is performed under general anaesthesia.

Your liver surgery will take place on _____

Please ensure that the surgeon knows if you are on Aspirin, Clopidogrel or Warfarin and you are told on what day to stop these prior to your operation.

Notes

If you have any questions do not hesitate to contact:

Helen O'Horan, Clinical Nurse Specialist

Tel: 01256 313079
Or bleep 1231 via the hospital
switch board (01256 473202)

Useful contact details

Pelican Cancer Foundation	www.pelicancancer.org
Macmillan Cancer Support Cancerline: 0808 808 2020	www.macmillan.org.uk
Wessex Cancer Trust Tel: 023 8067 2200	www.wessexcancer.org
British Liver Trust	www.britishlivertrust.org.uk

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