



Royal Free London
NHS Foundation Trust

Information about having liver surgery

Information for patients

Proposed admission date:

.....

Expected length of stay:

.....

Hepatopancreaticobiliary (HPB) service

The Royal Free London NHS Foundation Trust is one of London's top teaching hospitals and part of the UCLPartners, which is one of the ten foremost research universities in the world.

Together we are a leading HPB centre within the UK, benefiting from the knowledge and experience of some of the most highly regarded specialists in the world today.

Patients travel from all over the UK to receive the best possible care as our experienced team combines a personalised and friendly approach with state-of-the-art diagnostic and treatment tools required for these complex conditions.

Liver resection

The liver sits in your abdomen under the diaphragm, mostly on the right side, protected by the rib cage. See figure 1 on page 6. A liver resection is performed in order to remove a diseased part of your liver.

When the right side of your liver is removed, the gallbladder (which is attached to the liver) is also removed.

In the period after your operation, your liver will grow to compensate for the part we removed. Initially, the rate of regrowth will be fairly fast with most of the liver tissue restored within the first few weeks after surgery. It usually returns to normal size, although not original shape, within six to eight weeks.

Before surgery

Following your initial appointment with your consultant, there will be an opportunity for you to speak to the HPB clinical nurse specialist (CNS) who can answer any questions about your condition and proposed treatments and provide you with leaflets on all aspects of your care.

Scans and procedures:

These may be required to clarify your diagnosis and help decide on your best treatment options. We may need to repeat a scan you've already had or you may need some different ones and can include any of the following:

- CT, MRI or ultra sound scan
- nuclear medicine investigations, eg a PET scan
- endoscopic investigations, eg an ERCP (endoscopic retrograde cholangiopancreatography) and/or an EUS (endoscopic ultrasound)
- laparoscopy (keyhole surgery to view the abdominal organs)

Information is available on the scans and procedures so please ask a member of staff if you would like a leaflet or visit our website:

www.royalfree.nhs.uk/services/services-a-z/radiology/radiology-services

Please do ask your healthcare team as many questions as you need to, as it is very important that you fully understand all aspects of your operation.

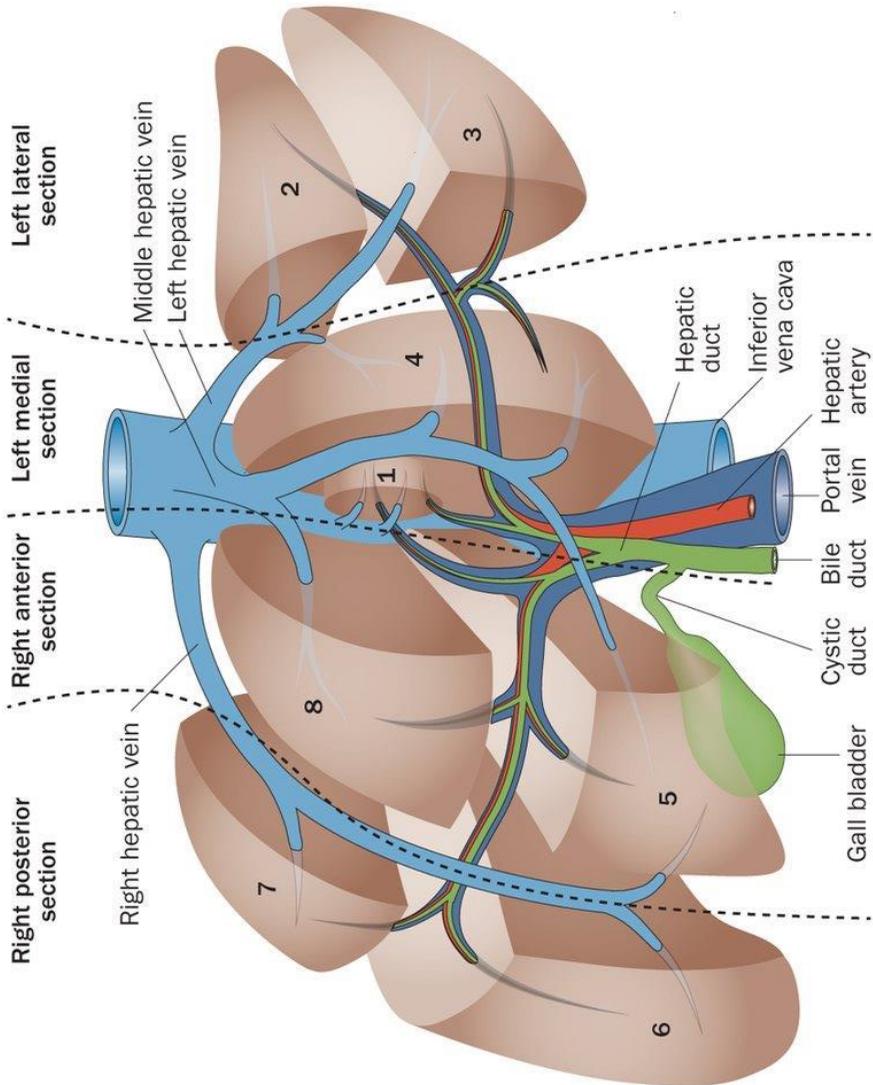
Intermediate procedures

Once your surgery is agreed, intermediate procedures are sometimes required in preparation for the main surgery:

- Portal vein embolisation (PVE) – veins to the diseased part of the liver are blocked so that the diseased area shrinks. This encourages the healthy area to grow so that you have more healthy liver after the operation.
- Transarterial embolisation (TAE) – The artery supplying the tumour is blocked. This can prevent their growth and in some cases, can shrink the tumour making surgery possible.
- Radiofrequency ablation (RFA) – a heated probe is used to destroy the tumour cells. This can be done in conjunction with a PVE or with surgery, or where surgery is not possible.

If PVE or RFA are required, you will be provided with separate leaflets with further information.

Figure 1. Diagram of the liver and surrounding vessels



Types of resection

- Right hepatectomy – removing the right side of the liver (segments 5,6,7,8)
- Left hepatectomy – removing the left side of the liver (segments 1,2,3,4)
- Left lateral sectionectomy – removing segments 2 and 3
- Right posterior sectionectomy – removing segments 6 and 7
- Segmentectomy – the removal of one of eight segments
- Wedge resection – the removal of part of one of the segments
- ALPPS (associating liver partition and portal vein ligation for staged hepatectomy) – allows large parts of the liver to be removed in two separate operations, usually a week or two apart. Patients sometimes stay in hospital during this time, or if clinically fit, may go home and be re-admitted at a later date for the second operation. Patients will require a new CT scan before the second operation to check the regeneration of the liver (how much the liver has grown) and remnant volumes.

Possible risks and complications

All major surgery carries risks, but as these operations are undertaken to try to cure your disease, you may decide that the risks are worth taking. You can discuss all the possible risks and complications with your consultant and specialist nurse. Please ask any questions you may have.

Complications can occur both during the operation and afterwards during your recovery. These can be dealt with by your consultant and the specialist team.

Please be aware that you are unlikely to develop all of these conditions and may not develop any of them.

- **Bleeding** – some bleeding during the operation is normal. Bleeding from the cut liver surface is controlled and is rarely a problem. You may need to have a blood transfusion during or after the operation. If bleeding continues you may need to return to theatre, but this is extremely rare.
- **Bile leaks** – there is a complicated network of bile ducts within the liver. After surgery, there can sometimes be leakage into the surrounding area. You will be carefully monitored for this and normally the issue resolves itself; however you may need to have a drain inserted to manage the problem. Very rarely, some patients might need another operation.
- **Wound infection** – you will have a fairly large wound over your upper abdomen. 30 to 50 % of patients will get an infection in this wound. This is usually a minor infection and can be treated with antibiotics. The wound can usually be dressed by the practice nurse at your GP surgery or by the district nurses in your home.
- **Chest infection** – this is a common complication and can occur if you are not moving around enough or breathing deeply enough after surgery. The physiotherapists will show you breathing exercises and encourage you to be mobile as soon as possible in order to minimise the risk of chest infections.

- **Liver failure** – On very rare occasions, the remaining liver can stop working properly after surgery. This, however, often resolves itself after a period of time.

Is there a chance of dying from this operation?

Yes there is a risk of death. There are risks associated with all operations, even with surgery that is considered to be minor. The risk of dying from having liver surgery is about 2-3%.

Liver surgery is often performed after a diagnosis of cancer, so the risks to you of having surgery are balanced against the risks of not having surgery.

You will be able to discuss your own specific risks with the team before you make your decision. This is very individual and is based on several factors including how well you are in general. Please do not hesitate to ask your healthcare team any questions you may have.

Giving your consent (permission)

We want to involve you in decisions about your care and treatment. Before carrying out any procedure, staff will explain the procedure to you, along with the associated risks, benefits and alternatives. If you have any questions about your care, or any concerns, please do not hesitate to ask for more information.

If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

Pre-assessment appointment

We need to assess your medical fitness before you can have a general anaesthetic and surgery.

- A pre-assessment nurse will complete a general health check.
- Blood will be taken for cross-matching should you need a transfusion be required. The bloods will also check your liver and kidney function, blood count and clotting factors.
- Results of any tests will only be reported to you if further investigations are needed. You may also be required to meet an anaesthetist or you may receive a phone call from them if some details you provided need clarification.

Admission

Patients are asked to come in to the surgical admissions area (SAA) on the morning of surgery. If you live a long distance from the hospital you will be offered overnight accommodation in a local hotel. If your condition requires, you may be admitted to the hospital the evening before surgery.

Possible cancellation of surgery

We do everything we can to ensure that your surgery goes ahead as planned. However, as we are a leading centre for transplants, occasionally operations have to be rescheduled at short notice (sometimes on the morning of surgery) if a transplant organ becomes available. We do appreciate how disappointing this can be so it would be worthwhile preparing yourself beforehand for this possibility.

Day of surgery

You will be asked to have nothing to eat from midnight the night before your operation. You can have sips of water until 6am.

During your operation your surgeons will take samples from the liver and send them to the laboratory for close examination. The results should be available for when you come back to clinic for your follow-up appointment.

Throughout the operation you will be looked after by the team of specialist surgeons, anaesthetists and theatre nurses and you will be closely monitored until you are fully awake.

After surgery, you will spend the first 24-48 hours in intensive treatment unit (ITU). Some patients may need to stay longer and others stabilise more quickly. Once you are medically ready, you will be transferred to the specialist HPB ward.

Once the operation is completed, a member of the surgical team will ring your next of kin.

After surgery

Following your operation you will have several tubes in place:

- **Oxygen** – after a long operation you may require extra oxygen. This is given via a face mask or by small tubes which go inside your nostrils.
- **Pain control** – it is essential that you are as comfortable as possible following your operation so that you can breathe properly and move about as freely as possible. You will usually be given an anaesthetic injection into your spine just before your operation. When you wake up you will have a button which you can press whenever you need pain relief.

- **Catheter** – we need to monitor your urine output as this is a sign that your kidneys are working. You will have a catheter inserted during the operation and this will generally be removed when you are able to walk to the toilet.
- **Drains** – a tube will be inserted into your abdomen after the operation so that any excess fluid can drain away. This can usually be removed after 5 days.

There are several routine checks that will take place every few hours, which will reduce in frequency as you progress from day to day.

- **Blood pressure, pulse and temperature** – these will be monitored throughout the day and night initially to check for any signs of surgical complications

You will be encouraged to get out of bed the day after surgery and to carry out breathing exercises to keep your lungs clear and reduce the risk of chest infections. Having drips and drains does not mean you have to stay in bed. The more you move, the quicker you will recover

Diet

There are no dietary restrictions following liver surgery.

It can take a while to get your appetite back and you may only feel like eating a light diet at first.

If you need supplements or advice, you can discuss with your clinical nurse specialist (CNS).

Going home

Patients are usually well enough to go home five to seven days after their operation. You will not automatically receive help from nurses or carers at home unless there is a specific problem. If you are worried about coping at home, please contact your CNS or talk to the nurses on the ward.

Before leaving the ward you will be given any medication you need. We aim that you will be able to leave the ward by 12 noon and it is expected that your friends or family collect you.

Your wound clips will be removed approximately 10 days after surgery by the practice nurse at your GP surgery. This will be organised by the ward nurses. They will also organise a nurse to change your dressings if needed.

You will have a telephone consultation with your CNS the week after discharge and will have a face-to-face clinic appointment two weeks after discharge.

There is an increased risk of blood clots after major abdominal surgery, so we start patients on daily injections of a blood thinning drug called 'tinzaparin' for 28 days following surgery.

Patients will be given the option to inject themselves, have a partner/carer trained to inject them or have a local nurse inject them.

While on tinzaparin, patients will need to monitor themselves for any side-effects such as increased bruising or bleeding. Patients will need to have a blood test with their GP between 5 to 14 days

after starting the injections. This is to monitor for low platelets which can occur in some patients (1%) and increase the risk of bleeding.

If you have any questions about this please ask the ward pharmacist during your inpatient stay or speak to your CNS.

Once you are at home you can really begin the process of getting back to normal.

You should try to keep as active as possible when you go home. We encourage you to take mild exercise such as walking, but please remember that you will tire easily so you may also need regular rests. You should not do any heavy lifting or driving for about six weeks.

If you have any concerns at all about your recovery or you feel unwell, please contact your CNS. Some things to look out for are:

- raised temperature
- red, hot or painful wound
- nausea or vomiting
- diarrhoea
- sudden leg swelling and/or pain
- new onset of shortness of breath
- jaundice (yellowing of the eyes and / or skin)

If you have any of these problems, it is not necessarily anything to worry about, but it is better to check with your CNS in case you have developed a new complication.

Further treatment

At your first follow-up appointment, you will either see a doctor or your CNS. They will give you the results of the tissue sample that was sent off during your operation. They will discuss this with you and let you know if you require any further treatment.

If you have had your operation to remove cancer:

- You will need to be closely monitored for 5-10 years after your surgery. Please ask your doctor or nurse what your follow-ups will involve.
- You may need further treatment and an appointment will be made for you with the oncology team to discuss your options.

Where can I get support from if I have cancer?

Support is provided for you and your family through the Macmillan services and the oncology CNS team at the Royal Free Hospital or from your local hospital.

The Macmillan cancer information and support centre at the Royal Free Hospital is located on the ground floor of the hospital, within the oncology out-patients department.

- Phone: 020 7794 0500 extension 31337
- E-mail: rf.cancerinfo@nhs.net
- Website: www.macmillan.org.uk

For further details of support services available, pick up a copy of our leaflet, 'What support is available to you at the Royal Free Hospital on a diagnosis of cancer?' Alternatively you can read it online here: www.royalfree.nhs.uk/services/services-a-z/cancer-services/#tab-patient-leaflets

How your HPB CNS can help you

Support is given on an individual basis and can include any or all of the following:

- Support for you and your family at all stages of your illness
- Provision of written and verbal information about your condition, your investigations and your planned treatment
- Teaching you and your family about your care and treatment
- Assisting in the co-ordination of your care by liaising on your behalf with other members of the team to ensure that everything goes as smoothly as possible
- We can be your first point of contact at the hospital
- We are easily contactable which ensures that the hospital is easily accessible to you

Please contact your CNS if you or your family needs support. Their working hours are Monday to Friday, 9am to 5pm. If you have an urgent problem outside of these hours, please call 111 or contact 9 West ward for advice.

Where can I get help to stop smoking?

If you smoke, now would be a very good time to consider stopping. Help is available from NHS SmokeFree:

- Phone: 0800 1690 169 or 0300 123 1044
- Website: www.nhs.uk/smokefree

Contacts

Address: Royal Free Hospital
Pond Street
London, NW3 2QG

Main switchboard: 020 7794 0500 – please ask for the required extension or bleep number.

Your consultant is:

Your HPB clinical nurse specialist (CNS) and key worker is:

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Phone number:

Bleep:

E-mail address:

More information

For more information about the HPB service at the Royal Free London, please visit our website: www.royalfree.nhs.uk

Your feedback

If you have any feedback on this leaflet or for a list of references for it, please email: rf.communications@nhs.net

Alternative formats

This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

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