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Document Title:

**Liver Resection for Secondary Liver Cancer**

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### **What is secondary liver cancer?**

Secondary liver cancer (liver metastases) means that cancer from another part of your body (the primary cancer) has spread through your bloodstream to your liver. About 1 in 3 people with cancer develops secondary liver cancer. Liver cancer can cause symptoms such as pain, weight loss, tiredness and fluid collecting in your abdominal cavity (ascites).

### **What is a liver resection?**

A liver resection (or hepatectomy) involves removing the part of your liver affected by the cancer (see figure 1).

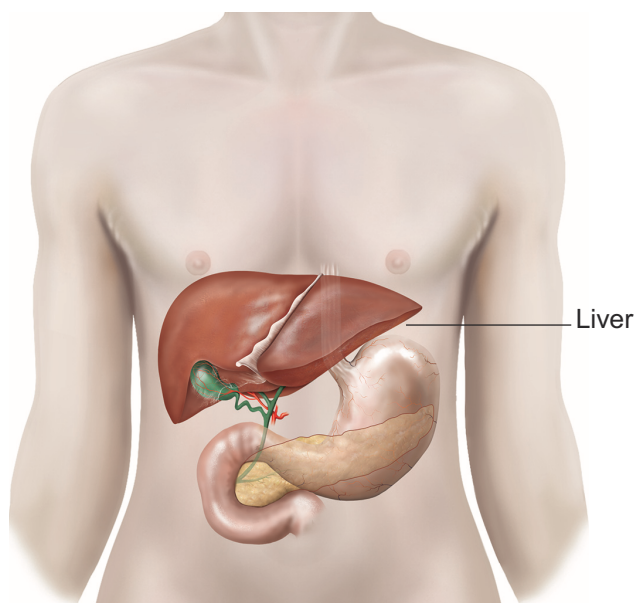


Figure 1

Your surgeon can mark where the cancer is and the part of the liver they will remove

Your tests have shown that a liver resection offers the best chance of you being free of liver cancer. A liver resection is a major operation and serious complications can happen. It is your decision to go ahead with the operation or not. This document will give you information about the benefits and risks to help you to make an informed decision.

If you have any questions that this document does not answer, ask your surgeon or the healthcare team.

### **What are the benefits of surgery?**

The aim is to remove all the cancer and your symptoms should improve.

### **Are there any alternatives to surgery?**

There are other treatment options such as chemotherapy, radio-frequency ablation (RFA) and hormone therapy, which have less serious complications than surgery.

These treatments on their own will not usually cure you but can be used to shrink the cancer and so improve your quality of life.

The treatment options depend on where your primary cancer is. Your surgeon and oncologist (doctor who specialises in treating cancer) will be able to discuss the options with you.

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

The healthcare team will continue to be involved in your care. Your surgeon and oncologist will discuss non-surgical treatments with you.

### **What does the operation involve?**

The healthcare team will carry out a number of checks to make sure you have the operation you came in for. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

The operation is performed under a general anaesthetic and usually takes 4 to 5 hours. You may be given antibiotics during the operation to reduce the risk of infection.

Your surgeon will free your liver from the tissues that hold it in place. They may use an ultrasound probe to find exactly where any cancers are.

Your surgeon will separate your bile ducts and the blood vessels that supply your liver, preserving as much as possible of the healthy liver. They will remove the cancer with a rim of healthy liver tissue around the cancer.

The healthcare team will place a small tube in a vein in your arm (drip) and in your neck (called a central line). They will also place a catheter (tube) in your bladder to help you to pass urine. They may also place a tube (nasogastric or NG tube) into your nostrils and down into your stomach to keep your stomach empty.

All organs and tissues removed will be examined carefully for evidence of cancer and will be stored. They may be used in the future to help find new treatments for cancer. Let your surgeon know if you do not want your organs and tissues used in this way.

## • Open surgery

Your surgeon will usually use open surgery, where the operation is performed through a single cut across the upper part of your abdomen, just under your ribcage.

Your surgeon will close the cut. They may insert drains (tubes) in your abdomen to drain away fluid that can sometimes collect.

## • Laparoscopic (keyhole) surgery

Your surgeon may use keyhole surgery as this is associated with less pain, less scarring and a faster return to normal activities. However, this technique is suitable for fewer than 1 in 7 people. Your surgeon will make a small cut on or near your umbilicus (belly button) so they can insert an instrument in your abdominal cavity to inflate it with gas (carbon dioxide). They will make several small cuts on your abdomen so they can insert tubes (ports) into your abdomen. Your surgeon will insert surgical instruments through the ports along with a telescope so they can see inside your abdomen and perform the operation (see figure 2).

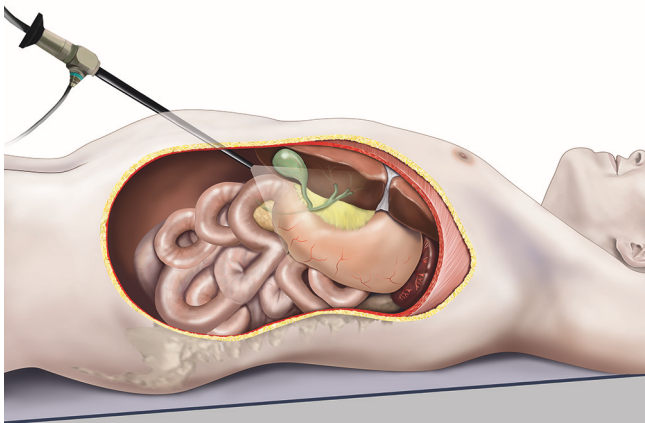


Figure 2  
Laparoscopic surgery

Your surgeon will remove the instruments and close the cuts.

For about 1 in 20 people it will not be possible to complete the operation using keyhole surgery. The operation will be changed (converted) to open surgery.

## Will I need more treatment?

You may benefit from other treatment before or after surgery. Your surgeon and oncologist may recommend combining surgery with chemotherapy, RFA or hormone therapy to give you the best chance of being free of liver cancer.

These treatments also have side effects and complications. Your surgeon and oncologist will discuss the options with you and recommend the best treatment for you. You will be given further information to help you to decide.

## What should I do about my medication?

Let your doctor know about all the medication you take and follow their advice. This includes all blood-thinning medication as well as herbal and complementary remedies, dietary supplements, and medication you can buy over the counter.

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

If you smoke, stopping smoking several weeks or more before the operation may reduce your risk of developing complications and will improve your long-term health.

Regular exercise should help to prepare you for the operation, help you to recover and improve your long-term health. Before you start exercising, ask the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound.

- In the week before the operation, do not shave or wax the area where a cut is likely to be made.
- Try to have a bath or shower either the day before or on the day of the operation.
- Keep warm around the time of the operation. Let the healthcare team know if you feel cold.

## What complications can happen?

The healthcare team will try to make the operation as safe as possible but complications can happen. Some of these can be serious. Using keyhole surgery means it is more difficult for your surgeon to notice some complications that may happen during the operation. When you are recovering, you need to be aware of the symptoms that may show that you have a serious complication. You should ask your doctor if there is anything you do not understand.

Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

## 1 Complications of anaesthesia

Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

## 2 General complications of any operation

- Pain can be severe with this operation. The healthcare team will give you strong painkillers either by an epidural or through the drip. It is important that you take the medication as you are told so you can move about and cough freely.
- Bleeding during or after the operation. The liver has a good blood supply. The healthcare team will monitor you closely for signs of bleeding. You may need a blood transfusion (risk: 3 in 10). You may need another operation to stop the bleeding (risk: less than 1 in 30).
- Infection of the surgical site (wound) (risk: 1 in 20). It is usually safe to shower after two days but you should check with the healthcare team. Let the healthcare team know if you get a high 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 another operation (risk: 1 to 2 in 100).
- Developing a hernia in the scar, if you have open surgery, caused by the deep muscle layers failing to heal. This appears as a bulge or rupture called an incisional hernia. If this causes problems, you may need another operation.
- Blood clot in your leg (deep-vein thrombosis – DVT). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medication, or special stockings to wear. Let the healthcare team know straightaway if you think you might have a DVT.
- Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. Let the healthcare team know straightaway if you become short of breath, feel pain in your chest or upper back, or if you cough up blood. If you are at home, call an ambulance or go immediately to your nearest Emergency department.

## 3 Specific complications of this operation

### a Keyhole surgery complications

- Damage to structures such as your bowel, bladder or blood vessels when inserting instruments into your abdomen (risk: less than 3 in 1,000). The risk is higher if you have had previous surgery to your abdomen. If an injury does happen, you may need open surgery. About 1 in 3 of these injuries is not obvious until after the operation.

- Developing a hernia near one of the cuts used to insert the ports (risk: 1 in 100). Your surgeon will try to reduce this risk by using small ports (less than a centimetre in diameter) where possible or, if they need to use larger ports, using deeper stitching to close the cuts.

- Surgical emphysema (crackling sensation in your skin caused by trapped carbon dioxide gas), which settles quickly and is not serious.

### b Liver resection complications

- Jaundice, where your eyes and skin turn yellow, because the remaining liver has to work harder. This usually improves as your liver regenerates (grows back).

- Liver failure, where your liver stops working (risk: 1 in 10). The risk depends on how much liver needs to be removed and how healthy your liver is. This is a life-threatening complication.

- Bile leaking from the surface of your liver where tissue has been removed (risk: 1 in 20). This can cause pain and infection. The bile may need to be drained.

- Continued bowel paralysis (ileus), where your bowel stops working for more than a few days, causing you to become bloated and to be sick. You may need an NG tube until your bowel starts to work again.

- Tissues can join together in an abnormal way (adhesions) when scar tissue develops inside your abdomen. Adhesions do not usually cause any serious problems but can lead to bowel obstruction. You may need another operation. The risk is lower if you have keyhole surgery.

- Failure to remove the cancer. Sometimes during the operation your surgeon finds that the cancer has spread too far to remove it safely. Also, even though your surgeon will remove a rim of liver tissue around the cancer, sometimes cancer cells are found in this tissue. Your surgeon and oncologist will discuss other treatment options with you.

- Death sometimes happens with a liver resection (risk: 1 to 2 in 20). The risk depends on how much liver needs to be removed, how healthy your liver is and how fit you are.

## How soon will I recover?

### • In hospital

After the operation you will be transferred to the intensive care unit or high dependency unit for one to two days so the healthcare team can monitor you more closely. You will then go to the ward.

The healthcare team will help you with deep breathing, coughing and moving about. Your bowels will usually slow down or stop working. You will not be given anything to eat or drink for a few days while your bowels get back to normal. You will be given fluid through the drip. The healthcare team will use the central line to monitor the pressure of blood returning to your heart. This will help your doctor to know how much fluid to give you.

When you are ready to drink, the NG tube will be removed and you can drink small amounts of water. Over a few days you should be able to drink and then eat normally. You may need to take laxatives if you get constipated.

The drains, drips and catheter will usually be removed after 2 to 5 days.

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 move, breathe or cough.
- A high temperature or fever.
- Dizziness, feeling faint or shortness of breath.
- Feeling sick or not having any appetite (and this gets worse after the first one to two days).
- Not opening your bowels and not passing wind.
- Swelling of your abdomen.
- Difficulty passing urine.

If you do not continue to improve over the first few days, or if you have any of these symptoms, let the healthcare team know straightaway.

You should be able to go home after 2 to 5 days if you had keyhole surgery or after 7 to 14 days if you had open surgery. However, your doctor may recommend that you stay a little longer.

If you are worried about anything, in hospital or at home, contact the healthcare team. They should be able to reassure you or identify and treat any complications.

#### • **Returning to normal activities**

To reduce the risk of a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medication or need to wear special stockings.

A liver resection is a major operation and it will take you up to three months to recover fully. If you have keyhole surgery, you should recover within four weeks.

You can expect to feel tired once you return home. Your appetite may be affected and it is normal to feel low or depressed for a while.

Exercise gently, especially walking, doing a little more each day. Gradually get back to your normal activities. Before you start exercising, ask the healthcare team or your GP for advice. Do not drive until you are confident about controlling your vehicle and always check your insurance policy and with your doctor.

#### • **The future**

Unfortunately, the healthcare team cannot guarantee you will be cured even after the cancer is removed by surgery. If the cancer has spread to your liver from your bowel, overall about 3 in 10 people will be cured. The chance of being cured may be different if the cancer has spread from somewhere else.

Your doctor will be able to give you a better idea of your chance of being cured once the cancer has been examined under a microscope. If the cancer is at an early stage, with no lymph nodes (glands) affected, there is a higher chance of you being cured.

An advanced cancer is likely to come back despite the best available treatment.

Even if surgery does not lead to you being cured, you should survive longer and have a better quality of life than if you did not have surgery.

#### **Summary**

Secondary cancer of your liver is a serious condition. Your tests have shown that there is a good chance of you being free of liver cancer if you have surgery. However, a liver resection is a major operation and serious complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

**Keep this information leaflet. Use it to help you if you need to talk to the healthcare team.**

#### **Acknowledgements**

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