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Liver Resection for Secondary Liver Cancer

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You can get information locally from:

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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 the abdominal cavity (ascites).

What is a liver resection?
A liver resection (or hepatectomy) involves removing the part of the liver affected by the cancer (see figure 1).

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 make an informed decision.
If you have any questions that this document does not answer, you should ask your surgeon or any member of the healthcare team.

What are the benefits of surgery?
Surgery is aimed at removing all of the cancer and your symptoms should also 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 between four and five hours. You may be given antibiotics during the operation to reduce the risk of infection.
Your surgeon will free the 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 the bile ducts and the blood vessels that supply the liver, preserving as much as possible of the healthy liver. They will then remove the cancer with a rim of healthy liver tissue around the cancer.
They will place a small tube in a vein in your arm (intravenous drip) and in your neck (called a central line). They will also place a catheter (tube) in your bladder to help you pass urine. They may also place a tube (naso-gastric or NG tube) into your nostrils and down into your stomach to keep your stomach empty.

Figure 1
The liver
Your surgeon can mark where the cancer is and the part of the liver they will remove.
All organs and tissues removed will be carefully examined 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 the organs and tissues used in this way.

- **Open surgery**
  The open technique is usually used. The operation is performed through a single cut across the upper part of your abdomen, just under the ribcage.
  At the end of the operation, your surgeon will close the cut. Sometimes they may place one or two drains (small tubes) in the wound.

- **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 patients.
  Your surgeon will make a small cut in or near your umbilicus (belly button) so they can insert an instrument which inflates the abdominal cavity with gas (carbon dioxide). They will make several small cuts in your abdomen so they can insert tubes (ports) into your abdomen. Your surgeon will place surgical instruments through the ports along with a telescope so they can see inside your abdomen and perform the operation (see figure 2).
  In about 1 in 20 people it will not be possible to complete the operation using the laparoscopic technique. The operation will be changed (converted) to an open procedure.

![Figure 2](image)

The technique for laparoscopic 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 complications and side effects.
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 decide.

**What should I do about my medication?**
You should let your doctor know about all the medication you are on and follow their 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 warfarin or clopidogrel before your operation.

**What can I do to help make the operation a success?**
If you smoke, stopping smoking several weeks or more before an operation may reduce your chances of getting complications and will improve your long-term health.
Regular exercise should help prepare you for the operation, help you recover and improve your long-term health. Before you start exercising, ask a member of the healthcare team or your GP for advice. You can reduce your risk of infection in a surgical wound.

• In the week before your 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 your operation.
• Keep warm around the time of your operation. Let a member of the healthcare team know if you are cold.

What complications can happen?
The healthcare team will try to make your operation as safe as possible. However, complications can happen. Some of these can be serious.

Using the laparoscopic technique means it is more difficult for your surgeon to notice 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, which can be severe with this operation. The healthcare team will give you strong painkilling drugs, either by an epidural (drugs given through a small tube in the spine) or through the drip. You will receive the drugs constantly for the first few days. They will then give you oral (by mouth) medication. It is important that you take the medication as you are told so you can move about and cough freely.

• Bleeding during or after surgery. 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). Sometimes you may need further surgery to control 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 48 hours. However, you should check with a member of the healthcare team. Let the healthcare team know if you get 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 an operation (risk: 1 to 2 in 100).

• Developing a hernia in the scar, 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 a further operation.

• Blood clot in the 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 surgery and may give you injections, medication, or special stockings to wear. Tell the healthcare team straightaway if you think you might have a DVT.

• Blood clot in the lung (pulmonary embolus). This happens if a blood clot moves through the bloodstream to your lungs. 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 tell the healthcare team straightaway or, if you are at home, go to your nearest Accident and Emergency department immediately or call an ambulance.
3 Specific complications of this operation

a Laparoscopic complications

• Damage to internal structures such as the bowel, bladder or blood vessels when placing instruments into the abdomen (risk: less than 3 in 1,000). The risk is higher in people who have previously had surgery to the abdomen. If an injury does happen, you may need open surgery, which involves 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). 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 techniques to close the cuts.

• Surgical emphysema (crackling sensation in the skin due to trapped carbon dioxide gas), which settles quickly and is not serious.

b Liver resection complications

• Jaundice, where the skin turns yellow in colour. This can happen because the remaining liver has to work harder. This usually improves as the liver regenerates (grows back).

• Liver failure, where the liver stops working (risk: 1 in 10). The risk depends on how much liver needs to be removed and how healthy your liver is.

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

• Failure to remove the cancer. Sometimes during the operation the 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. If this happens, your surgeon and oncologist will discuss other treatment options with you.

• Death, which does sometimes happen 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 recovery area and then to the high dependency or intensive care unit. You will usually be transferred to the surgical ward after a day or two. The healthcare team will help you with deep breathing, coughing and moving about. Your bowels will usually slow down or stop working after the operation. You will not be allowed to eat or drink anything for the first few days while your bowels get back to normal. You will be given fluids 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 by mouth, 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 three to five days after the operation. The healthcare team will tell you if you need to have any stitches or clips removed, or dressings changed.

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 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, or if you have any of these symptoms, let a member of the healthcare team know straightaway.

You should be able to go home after seven to fourteen days. However, your doctor may recommend that you stay a little longer. If you are worried about anything, in hospital or at home, contact a member of 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 developing a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been prescribed drugs or have 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, you should ask a member of 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 the liver from the bowel, overall about 3 in 10 people will be cured. The chances 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 chances of being cured once the cancer has been looked at under a microscope. If the cancer is at an early stage, with no lymph nodes (glands) affected, there is a higher likelihood 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 the 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 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 a healthcare professional.

Acknowledgements
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