Radiology Department

King's College Hospital
NHS Foundation Trust

Microwave ablation of liver tumours – CT image guided

Information for patients

This leaflet explains microwave ablation of liver tumours. It covers what to expect on the day of the procedure, as well as the benefits, the possible risks and the alternatives. Before the procedure, a doctor will explain it to you in detail. This leaflet is not meant to replace that discussion.

If you have any questions or concerns, please do not hesitate to speak to the liver doctors or nurses caring for you. It is important that you feel well informed before agreeing to the procedure and signing the consent form.

Confirming your identity

Before you have a treatment or procedure, our staff will ask you to confirm your name and date of birth and check your ID band. If you do not have an ID band, we will ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern. your safety is our primary concern.

What is microwave ablation?

It is a treatment that uses high temperatures to destroy liver tumours while causing as little damage as possible to surrounding healthy tissue.

A special needle(s) will be inserted close to your liver tumour through a small cut about 1-2mm long. A CT or ultrasound scan or a combination of the two will be used to guide the insertion of the needle. The needle uses a short, high-frequency microwave pulse to generate a high temperature at its tip. This heat causes the tumour cells to die.

You have this procedure under general anaesthetic so you will be asleep.

Why do I need this procedure?

The team of doctors looking after you have discussed your case and the various treatments available. They have decided that this procedure is the most appropriate treatment for your liver tumours at this time.

What are the risks?

There are risks and possible complications with all procedures, although every effort is made to prevent them. The specialist doctor who carries out your procedure will discuss the potential risks when they go through the consent form with you.

Risks include:

- **Damage to nearby organs:** There is a less than 1% (1 in 100) risk of the organs next to your liver (gallbladder, stomach, lung and colon) being damaged by the heat generated during the procedure.
- **Bleeding:** There is a less than 1% (1 in 100) risk of serious bleeding. You will have blood tests before the procedure so we know if you have any problems with your blood clotting that we need to correct by giving you blood products or medication. During the procedure the doctor check for bleeding using an ultrasound, CT or MRI scan. Afterwards, we will monitor your heart rate and blood pressure. Once you are discharged home from hospital your chance of bleeding is very low.
- **Infection:** Less than 1% (1 in 100).
- **Post-ablation syndrome:** You may feel like you have the flu, feel unwell or have a fever about two – three days after the procedure. This can last for about two – three days, during which time you should rest and drink lots of fluids.
- **Radiation:** Your doctor will use CT scans to ensure they can carry out your procedure safely. These use x-rays, a type of ionising radiation. Your exposure to radiation from this procedure is low and any potential increased risk of developing cancer later in life is slight. The doctors treating you believe that the benefit of the procedure outweighs the risk from the exposure to radiation and they will ensure that your radiation exposure is kept as low as possible. If you have any concerns about this, please discuss it during the consent process with the specialist doctor who will carry out your procedure.
- **Pregnancy:** Please tell us before your procedure if you think you may be pregnant. This is due to significant potential risks to the foetus from the procedure itself and the accompanying radiation exposure.
- **Recurrence:** As with any cancer treatment, there is a risk that it will come back.

What are the benefits?

Microwave ablation treats liver tumours which at one time we could only have treated with traditional open surgery. There is extensive evidence that this procedure is as effective surgery. It is a minimally invasive procedure, so you will spend less time in hospital and will generally recover more quickly than if you have traditional surgery.

Are there any alternatives?

- **Alcohol injection**: Pure alcohol is injected into your tumour.
- **Selective internal radiation therapy (SIRT):** Tiny radioactive beads are injected into your bloodstream.
- **Chemo-embolisation:** Chemotherapy drugs are injected into your liver.
- **Chemotherapy:** You are given chemotherapy through a drip into a vein.
- **Surgery:** The tumours are removed by traditional open surgery.

Your doctor will be happy to discuss these options with you.

Consent

We must by law obtain your written consent to any operation and some other procedures, including CT-guided microwave ablation of liver tumours, beforehand. Staff will explain the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to speak with a senior member of staff again. We will inform your GP that you have had this procedure unless you specifically instruct us not to.

Where will I have the procedure?

You will have it in the Interventional Radiology Department, 1st Floor, Denmark Wing, King's College Hospital (KCH), Denmark Hill.

When will I have the procedure?

We aim to carry out your procedure as soon as possible after receiving the request from your doctor.

How can I prepare for my procedure?

Anaesthetic pre-assessment appointment: You may be asked to come in for this appointment. The nurse will ask you questions about you, your health and the medications you take. They may take a blood sample to check that you are in good general health and how well your blood clots.

Drugs and alcohol: Do not use any recreational drugs or drink alcohol for 24 hours before the procedure.

Medications: Please make sure the doctor or nurse knows if you are diabetic and whether you are taking tablets such as metformin or having insulin injections.

Also tell them if you are taking any of the following blood-thinning medications (anticoagulants): aspirin, clopidogrel, warfarin, apixaban, rivaroxaban, edoxaban, ticagrelor, prasugrel, phenprocoumon, acenocoumarol, dagibatran, argatroban, heparins, fondaparinux, enoxaparin.

You usually need to stop taking these medications a few days to a week before the procedure. But do not stop them on your own without talking to your liver doctor first. They will tell you when to stop and when it is safe to start taking them again.

If in doubt, please bring with you all the medications you are taking, whether they have been prescribed for you or if you have bought them over the counter at your local chemist.

Will I be admitted to hospital for the procedure?

You will be admitted to the hospital the day before your procedure and stay overnight afterwards. Very rarely, you may be admitted on the morning of your procedure. Our bed manager will call you to let you know when to come in and which ward to go to.

What to bring with you: Please bring a small overnight bag, all your medications and something to read.

What not to bring with you: Do not bring valuables, jewellery or large sums of money with you. If this unavoidable, please ask a relative or friend to take them home for you. The hospital cannot accept liability for the loss of such items.

What happens on the day of the procedure?

Eating and drinking: Do not eat anything after midnight. You can drink clear fluids up to **two hours** before your procedure.

Medications: Keep taking your regular medications, except for any blood-thinning ones. Remember to take your blood pressure medication on the morning of the procedure (if applicable). If your blood pressure is too high on the day of the procedure, you might need to have the procedure on another day.

What happens before my procedure?

One of the ward nurses will ask you to change into a gown. They will put a small, thin tube called a cannula into a vein in your hand or arm so we can give you medications such as antibiotics, pain relief or a sedative.

If you are diabetic and on insulin injections, you may also need a fluid drip in your vein to control your blood sugar once you start fasting at least six hours before your procedure.

The ward staff will ensure that you are ready and will escort you to Interventional Radiology where you will have the procedure.

What happens during the procedure?

An interventional radiologist – a specialist doctor trained in image-guided procedures – will carry out your procedure. They will explain the procedure to you and ask for your consent. There will also be an anaesthetist present who will give you general anaesthesia, so you with be asleep during the procedure. The doctor will be assisted by interventional radiology nurse(s) and a radiographer who operates the CT scanner inside the procedure room.

You will be attached to a monitor to check your heart rate, breathing, blood oxygen level and blood pressure. The anaesthetist will then give you the general anaesthetic.

The area near your liver where the needle will be put in will be cleaned with antiseptic and a sterile cover draped around it. The doctor will then make a small cut in your skin and use ultrasound or a CT scan to guide them as they place the needle into the liver tumour through your skin.

The needle produces heat which travels a few centimetres into your body. This destroys the tumour and about 1cm of your liver surrounding the tumour. We destroy this small area of your liver to ensure that the tumour has been destroyed and to reduce the risk of it growing back. Most of your normal liver tissue is not affected.

How long does the procedure take?

It usually takes about one hour but may take longer if more than one tumour needs treating.

What happens after the procedure?

You will be given some painkillers and taken to the recovery room. You will be monitored until you are fully awake and then taken back to your ward.

You will stay in hospital overnight and may be discharged in the next day or so if there are no complications.

How will I know if the procedure has been successful?

We will ask you to come back to hospital for a follow-up scan about six weeks after your procedure. The scan will show us whether the tumour has shrunk, grown or stayed the same after the treatment. You will continue to have follow-up scans to check how well the treatment has worked.

How do I care for the cut?

You will have a small dressing over the puncture site which you can change if necessary. If the dressing is heavily soiled, you can use a plaster to cover the cut instead. Keep the site dry for at least 48 hours, then remove the dressing and wash the area with soap and water. Avoid using lotion or powder. Make sure the cut has healed before bathing or soaking it in water.

When can I exercise and go back to work?

For the next one to two weeks, avoid heavy lifting, contact sports and strenuous exercise. When you can go back to work depends on the type of job you do. We usually suggest you take a week off.

What should I look out for after the procedure?

One in four patients develop post-ablation syndrome two – three days after the procedure. This causes mild flu-like symptoms and usually eases after two – three days. But if your temperature suddenly rises or you feel unwell, please contact the liver clinical specialist nurse or your liver doctor. If you feel very sick, call 999 or go to your nearest Emergency Department (ED/A&E).

What should I do if I cannot come for my procedure?

Please let us know as soon as possible by contacting the Interventional Radiology Department, so we can arrange another date and time. This also enables us to offer your appointment time to someone else.

King’s College Hospital, Denmark Hill, tel: **020 3299 3490**, **020 3299 6730** or **020 3299 3280**

Who can I contact with queries or concerns?

If you have any questions about your procedure, please contact the Interventional Radiology Nurses, 9am – 5pm, Monday to Friday

King’s College Hospital, Denmark Hill, tel: **020 3299 3490** or **020 3299 2060**

More information and support

- King's College Hospital: www.kch.nhs.uk
- NHS: www.nhs.uk, tel: 111
- British Society of Interventional Radiology: www.bsir.org (click on Patients, click on patient information leaflets, select leaflet)

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

MyChart

Our MyChart app and website lets you securely access parts of your health record with us, giving you more control over your care. Visit **www.kch.nhs.uk/mychart**to find out more.

Sharing your information

King's College Hospital NHS Foundation Trust has partnered with Guy's and St Thomas' NHS Foundation Trust through the King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas' hospitals. King's College Hospital and Guy's and St Thomas' NHS Foundation Trusts share an electronic patient record system, which means information about your health record can be accessed safely and securely by health and care staff at both Trusts. For more information, visit **www.kch.nhs.uk**

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

Tel: **020 3299 4618** Email: **kings.pals@nhs.net**

If you would like the information in this leaflet in a different language or format, please contact our Interpreting and Accessible Communication Support on 020 3299 4618 or email kings.access@nhs.net

www.kch.nhs.uk

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