

Radiofrequency (RFA) /Microwave ablation for liver cancer

Thermal ablation (RFA or Microwave) is used to treat certain types of cancer by heating the cancerous cells until they die. It is most commonly used to treat cancer of the liver, lung or kidney. This leaflet provides information about RFA/Microwave for treating cancer of the liver.

Most cancers of the liver are treated with chemotherapy, radiotherapy or surgery. However, you may be offered RFA or Microwave if surgery isn't suitable for you or if chemotherapy hasn't been successful. You may have the ablation on its own or in combination with other treatments (e.g. chemo-embolisation, where drugs are injected via the arteries supplying the liver).

What is RFA/Microwave ablation?

RFA or Microwave ablation destroys cancer cells using heat. This comes from a radiofrequency electrical current or microwave. The heat destroys the cancer cells (ablates them).

A needle electrode is inserted into the area to be treated, under CT scan guidance. Radiofrequency or Microwave energy is then applied to the needle which produces heat of over 50°C that kills the cancer cells without damaging other parts of the liver – healthy tissue can withstand heat better than abnormal cells.

Making a decision about RFA/Microwave ablation

Your consultant, together with other members of the multidisciplinary team, have discussed your illness and how to manage it. They have decided that thermal ablation is an appropriate treatment for you at this time. The final decision as to whether or not to have this procedure will be yours. You will have the opportunity to meet the radiologist performing the procedure prior to the date of the procedure.

Preparing for your RFA/Microwave ablation

As you will be having a general anaesthetic or strong sedation for this procedure, you will be asked to follow fasting instructions. Typically you must not eat or drink for about six hours before a general anaesthetic although you may be allowed occasional sips of water until two hours beforehand. You will need to have blood tests hours before the procedure, occasionally these are done on admission to the hospital on the day.

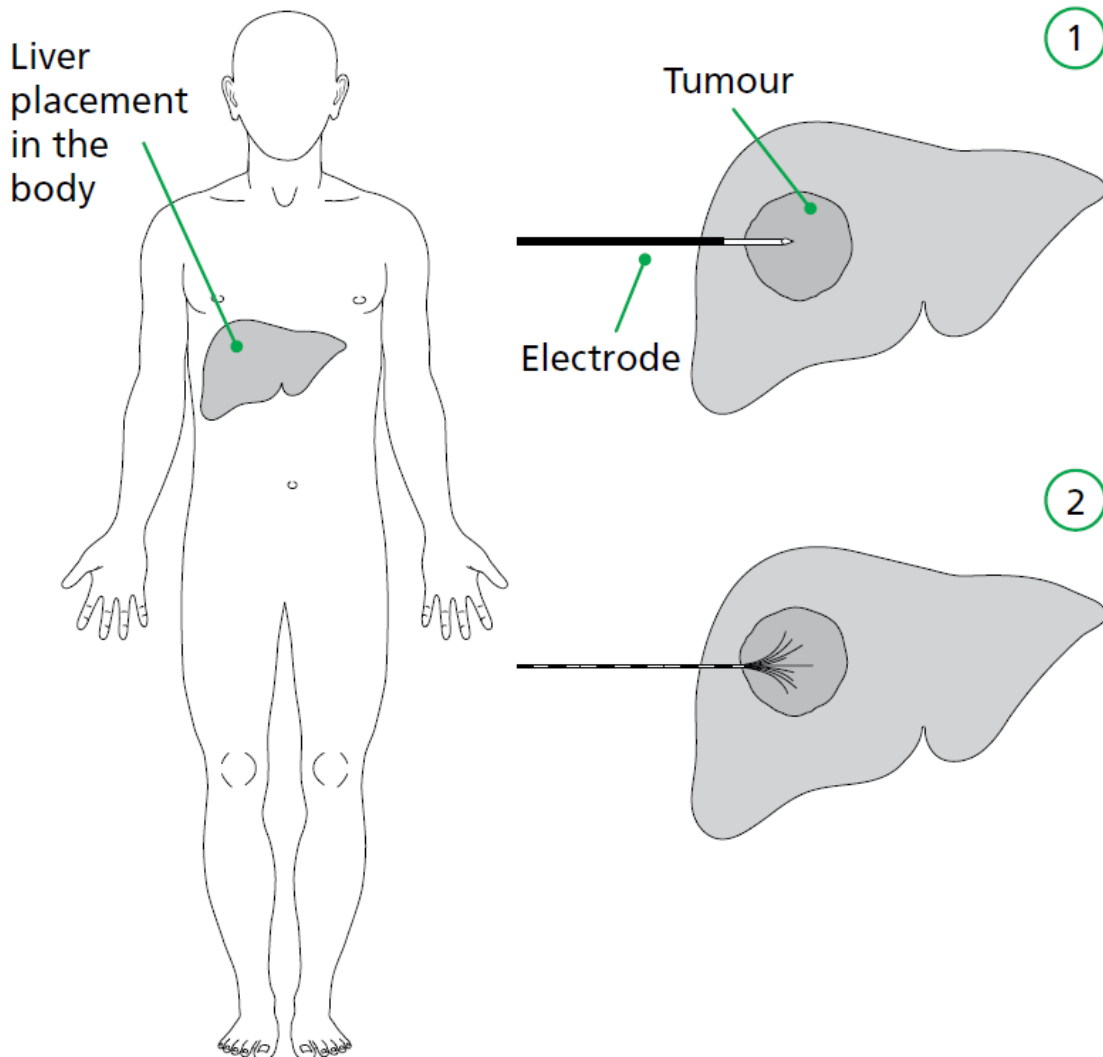
About the procedure

An interventional radiologist will perform the RFA or Microwave and explain the procedure to you and ask you to sign a consent form. This confirms that you understand the risks, benefits and possible alternatives to the procedure and given your permission for it to go ahead.



You may be given antibiotics to help reduce the chance of getting an infection after the procedure. These are usually given at the same time as the anaesthetic.

At the beginning of the procedure you will have a CT scan. The scan helps the radiologist place the needle electrode in the right position in your skin to reach the cancer. Once the needle is in place the electrical current of radiofrequency waves or microwave is applied. You may need to have more than one ablation depending on the size of your cancer. Each ablation can take between 5-30 minutes with the whole procedure lasting up to three hours depending on the type of ablation and how many ablations you need.



- 1- Microwave needle positioned within the tumour
- 2- RFA needle within the tumour

What to expect afterwards

You will need to rest until the effects of the anaesthetic have passed. You may be given further medicines to help prevent you from feeling any pain or sickness. You are likely to be advised to stay overnight in hospital. You may be given painkillers to take at home when you leave hospital.

Your concentration and co-ordination may not be as good as usual, and you may feel light-headed or faint. For these reasons, for 24 hours after the procedure you must:

- not drive a car or ride a bicycle
- not operate machinery
- be more aware of electrical appliances, cookers, hot saucepans etc
- not drink alcohol (especially on the day of your procedure)
- not sign any important or legal documents

Getting the results

You will have a scan of your liver within 4-6 weeks after having the ablation. This will usually be a CT, but occasionally may be an MRI scan. This is to check for any complications and to make sure the cancer has been destroyed. Your consultant will discuss the findings with you at your next appointment.

What are the risks?

RFA/Microwave ablations are commonly performed and generally safe. However, in order to make an informed decision and give your consent, you need to be aware of the possible side-effects and the risk of complications of this procedure.

Side-effects

These are the unwanted, but mostly temporary effects, you may get after having the procedure. Possible side-effects of RFA/Microwave to treat liver cancer include:

- a sore throat caused by the breathing tube placed in your throat for the general anaesthesia
- pain or discomfort around the area where the needles were inserted
- pain in your shoulder – treatments around the liver sometimes produce irritation of the diaphragm which is felt as pain in the shoulder

Complications

Complications are when problems occur during or after the procedure. The possible complications of any procedure include an unexpected reaction to the anaesthetic, infection, excessive bleeding or developing a blood clot, usually in a vein in the leg (deep vein thrombosis, DVT).

Other complications specific to thermal ablation include:

- feeling unwell with a raised temperature three to five days after the procedure (post ablation syndrome) - contact your doctor if your temperature doesn't return to normal after a few days as you may have an infection



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- damage to the organs near your liver, such as the gallbladder, bile ducts, diaphragm and bowel - although this is rare, you may need surgery to repair it
- very rarely, an abscess at the place where the needle was inserted (an abscess is a localised collection of pus caused by an infection) - this would need to be drained and treated with antibiotics
- very rarely, the contact pads can cause small electrical burns (in case of RFA) on your legs - you may need to have sterile dressings put on these

Will the procedure hurt?

The majority of RFA/Microwave ablations are done under general anaesthesia and sometimes under conscious sedation. Some mild pain after the procedure is normal and can usually be treated with oral painkillers.

Signs to look out for

If you experience either of the following symptoms after you go home:

- Excessive abdominal swelling
- Pain that is not controlled by regular painkillers (e.g Paracetamol).
- Increasing fever or pain 1-2 weeks after the procedure.

You should contact your GP

Where can I get more information?

British Society of Interventional Radiology (BSIR):

<http://www.bsir.org/patients/hepatic-malignancies/#percutaneous-ablation-techniques-radiofrequency-ablation-rfa>

Cardiovascular and Interventional Radiological Society of Europe (CIRSE):

<http://www.cirse.org/print.php?pid=96>

Contact

If there is anything else you would like to know please do not hesitate to ask us. You can contact us either in person or on the telephone on the following number:

Consultant Interventional Radiologists (Monday-Friday 9:00-17:00)

Dr Michael Crawford and Dr Mark Lewis via their secretaries.

Telephone: 01603 286330

