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# Renal Tumour Ablation

## **What is renal (kidney) tumour ablation?**

Renal tumour ablation is a minimally invasive procedure through which small renal tumours are treated while preserving the surrounding normal kidney. This is done by inserting a specialized needle (also known as an antenna) into the tumour under imaging-guidance (such as CT or ultrasound).

Radiofrequency waves or microwaves are released from the antenna in a precisely predefined target region to destroy the cancerous tissue. Occasionally, the procedure might be repeated more than once to completely destroy the tumour.

## **How to prepare for the procedure**

All patients undergoing renal tumour ablation are assessed a few days or weeks prior to the procedure. The radiologist who will be performing the procedure, your anaesthetist, and the urologist taking care of you, will make sure you are fit for the procedure. You will be asked certain general questions about your health (including any medications you might be taking at the time) and will be physically examined. Several blood tests together with a chest X-ray and/or ECG (electrocardiogram) might also be taken.

The radiologist will then scan your kidneys using an ultrasound machine to determine whether the tumour is best seen using ultrasound or whether the procedure will have to be done instead in the CT machine.

During this appointment, you will be given specific instructions regarding eating and drinking before the procedure, and about medications which you might need to stop temporarily.

This appointment is a good opportunity for you to ask any questions which you might have with regards to the procedure itself.



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## **What does the procedure involve?**

The procedure will take place in the interventional suite or CT Scanner. You will initially be taken to the Recovery Area (adjacent to the operating room) where you will be asked to change into a surgical gown. Your belongings will also be kept in a safe room. You will then be asked to wait within this room until you are called from the operating theatre, at which point you will be taken theatre by a theatre nurse on a stretcher.

A small tube (or cannula) will be inserted into your hand or arm – this will allow the team to give you antibiotics before the procedure to minimize the risk of infection. A special dye (or contrast) may also be given through this cannula during the procedure to help identify the actual tumour during the procedure.

You will be given general anaesthesia or heavy sedation by an anaesthetist. Once the procedure ends, you will be woken up again.

The tumour is then found using either ultrasound or CT. The antenna is then inserted into the tumour under imaging guidance. Once its position is confirmed, the ablation is performed for 1-6 minutes. Following this, the needle is then removed. The needle may be inserted more than once into the tumour to ensure it is completely destroyed. Real time control imaging will be performed using contrast ultrasound or CT, to ensure that no residual tumour is left untreated.

The entire procedure usually lasts between 60-90 minutes, depending on how easy the tumour is to target.



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## **What happens after the procedure?**

You will be initially taken back to the Recovery Area where you will be monitored for an amount of time following the procedure to ensure you remain well. At this point you will also be woken up from the general anaesthesia.

Eventually once you are deemed well enough, you will be taken back to the ward where you were admitted to rest. You are usually kept overnight following the procedure. Your parameters and general condition will be continuously monitored, and you will also eventually be weaned onto liquids and then solid food as the effects of the general anaesthetic progressively wear off. The following day you will be discharged home once deemed fit by the doctor taking care of you.

## **What are the risks of this procedure?**

Every procedure carries a small number of risks which might or might not occur. In the case of kidney ablations, the following might be seen:

- Post-ablation syndrome (a flu-like illness that occurs in 1 in 4 people 3-5 days following the procedure. This usually resolves on its own but you Paracetamol might help dull the symptoms).
- Bleeding (at the site where the needle entered the kidney).
- Infection (of the kidney being treated).
- Damage to structures surrounding the kidney (collateral damage either due to damage directly from the needle or due to the heat being generated by the antenna).



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You will be monitored during the period immediately after the procedure. However, when you go home, it is important to look out for the following to ensure you remain well:

- Pain that is not controlled with conventional anaesthesia (like paracetamol).
- Excessive abdominal swelling
- Increasing fever or pain 1-2 weeks following the procedure.

Should you experience any of the above, it is essential that you contact your caring physician immediately.

**Compiled by Dr. Simon Gatt**