RADIOFREQUENCY ABLATION OF TUMOUR(S) IN THE KIDNEY

Information about your procedure from
The British Association of Urological Surgeons (BAUS)

This leaflet contains evidence-based information about your proposed urological procedure. We have consulted specialist surgeons during its preparation, so that it represents best practice in UK urology. You should use it in addition to any advice already given to you.

To view the online version of this leaflet, type the text below into your web browser:

http://www.baus.org.uk/_userfiles/pages/files/Patients/Leaflets/Radioablate renal lesion.pdf

Key Points

- Radiofrequency ablation (RFA) is a treatment in which radio waves are used to kill cancer cells; this is a type of electrical energy which heats up the tumour and kills the cancer cells
- RFA is used to treat small kidney tumours (less than 4 cm in diameter)
- It may also be used in patients with small renal tumours but who have co-morbidities and are not candidates for major surgery
- Occasionally, it is used as an option in patients with tumours in a solitary kidney or in patients with bilateral/multiple tumours due to a rare genetic condition (von Hippel-Lindau disease)
- The procedure is performed by an interventional radiologist under image guidance
- You will require regular follow-up with scans to be sure that the treatment was successful and that there is no recurrence

What does this procedure involve?

The procedure involves placing probes (needles) through punctures in your skin (percutaneous approach). CT imaging is used to place the probes accurately into the tumour. An electrode in the probe creates radiofrequency energy, producing heat which kills the cancer cells.

A biopsy of your tumour may be taken at the same time.

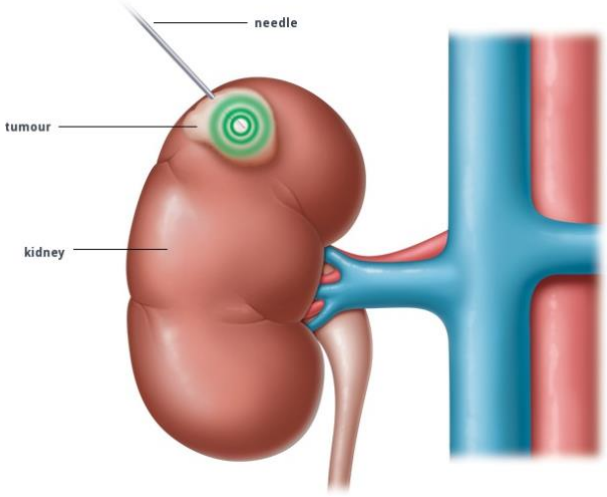
What are the alternatives?

- **Observation alone** – leaving the tumour in your kidney and observing it carefully for any signs of enlargement
- **Open radical nephrectomy** – removing the whole kidney and its surrounding tissues through an abdominal or loin incision
- **Laparoscopic radical nephrectomy** – removing the whole kidney and its surrounding tissues using a telescopic (keyhole) technique; this can be performed using robotic assistance
- **Open partial nephrectomy** – removing only the part of the kidney containing the tumour, through an abdominal or loin incision
- **Laparoscopic partial nephrectomy** – removing only the part of the kidney containing the tumour, using a telescopic (keyhole) technique; this can be performed using robotic assistance
- **Cryoablation** – freezing the tumour with cooled metal probes using CT guidance, telescopic (keyhole) techniques or direct puncture through your skin

What happens on the day of the procedure?

An interventional radiologist (or a member of their team) will briefly review your history and medications, and will discuss the procedure with you to confirm your consent.

Details of the procedure



- we normally carry out the procedure using a local anaesthetic into skin; occasionally we do the procedure under a general anaesthetic (i.e. with you asleep)
- we may also give you a sedative injection at the same time
- you will be carefully monitored throughout the procedure
- we may insert a catheter into your bladder through your urethra (waterpipe) to monitor your urine output during the treatment; we remove this at the end of the procedure
- we use imaging (usually CT scanning) to pinpoint the tumour in your kidney

- we may take needle biopsy samples from the abnormal area to confirm the diagnosis of a tumour, and to assess its extent
- the probes are put in through the skin of your back; sometimes we need to make very small incisions to get the probes through your skin
- the electrode in each probe creates radiofrequency energy which heats the tumour and kills the cancer cells
- the heating process takes 60 to 90 minutes to complete

Are there any after-effects?

The possible after-effects and your risk of getting them are shown below. Some are self-limiting or reversible, but others are not. We have not listed very rare after-effects (occurring in less than 1 in 250 patients) individually. The impact of these after-effects can vary a lot from patient to patient; you should ask your surgeon's advice about the risks and their impact on you as an individual:

After-effect	Risk
Temporary insertion of a bladder catheter	 All patients
Bleeding requiring transfusion or embolisation (radiological blockage)	 Between 1 in 10 & 1 in 50 patients
Entry into your lung cavity requiring insertion of a temporary drainage tube	 Between 1 in 10 & 1 in 50 patients
Need for further treatment if radiofrequency is not successful in eliminating the tumour	 Between 1 in 10 & 1 in 50 patients
Need for re-biopsy of the area at a later stage, to see whether the tumour has been eliminated	 Between 1 in 10 & 1 in 50 patients
Infection or pain at the site of the skin puncture(s)	 Between 1 in 10 & 1 in 50 patients

Involvement or injury to nearby local structures (blood vessels, spleen, liver, lung, pancreas & bowel) requiring more extensive surgery		Between 1 in 50 & 1 in 250 patients
The abnormality in your kidney may not be cancer on microscopic analysis		Between 1 in 50 & 1 in 250 patients
Anaesthetic or cardiovascular problems possibly requiring intensive care (including chest infection, pulmonary embolus, stroke, deep vein thrombosis, heart attack and death)		Between 1 in 50 & 1 in 250 patients (your anaesthetist can estimate your individual risk)

What is my risk of a hospital-acquired infection?

Your risk of getting an infection in hospital is approximately 8 in 100 (8%); this includes getting *MRSA* or a *Clostridium difficile* bowel infection. This figure is higher if you are in a "high-risk" group of patients such as patients who have had:

- long-term drainage tubes (e.g. catheters);
- bladder removal;
- long hospital stays; or
- multiple hospital admissions.

What can I expect when I get home?

- you usually need to stay in hospital overnight
- you will be given advice about your recovery at home
- you will be given a copy of your discharge summary and a copy will also be sent to your GP
- any antibiotics or other tablets you may need will be arranged & dispensed from the hospital pharmacy
- you may get some discomfort at the puncture sites which usually responds to simple painkillers
- it is common to develop a slight fever over the first 48 hours
- if you get a persistent temperature which does not settle after 48 hours or increased redness or throbbing at the operation site, you should contact your GP immediately

General information about surgical procedures

Before your procedure

Please tell a member of the medical team if you have:

- an implanted foreign body (stent, joint replacement, pacemaker, heart valve, blood vessel graft);
- a regular prescription for a blood thinning agent (warfarin, aspirin, clopidogrel, rivaroxaban or dabigatran);
- a present or previous MRSA infection; or
- a high risk of variant-CJD (e.g. if you have had a corneal transplant, a neurosurgical dural transplant or human growth hormone treatment).

Questions you may wish to ask

If you wish to learn more about what will happen, you can find a list of suggested questions called "Having An Operation" on the website of the Royal College of Surgeons of England. You may also wish to ask your surgeon for his/her personal results and experience with this procedure.

Before you go home

We will tell you how the procedure went and you should:

- make sure you understand what has been done;
- ask the surgeon if everything went as planned;
- let the staff know if you have any discomfort;
- ask what you can (and cannot) do at home;
- make sure you know what happens next; and
- ask when you can return to normal activities.

We will give you advice about what to look out for when you get home. Your surgeon or nurse will also give you details of who to contact, and how to contact them, in the event of problems.

Smoking and surgery

Ideally, we would prefer you to stop smoking before any procedure. Smoking can worsen some urological conditions and makes complications more likely after surgery. For advice on stopping, you can:

- contact your GP;
- access your local NHS Smoking Help Online; or
- ring the free NHS Smoking Helpline on **0800 169 0 169**.

Driving after surgery

It is your responsibility to make sure you are fit to drive after any surgical procedure. You only need to contact the DVLA if your ability to drive is likely to be affected for more than three months. If it is, you should check with your insurance company before driving again.

What should I do with this information?

Thank you for taking the trouble to read this information. Please let your urologist (or specialist nurse) know if you would like to have a copy for your own records. If you wish, the medical or nursing staff can also arrange to file a copy in your hospital notes.

What sources have we used to prepare this leaflet?

This leaflet uses information from consensus panels and other evidence-based sources including:

- the Department of Health (England);
- the Cochrane Collaboration; and
- the National Institute for Health and Care Excellence (NICE).

It also follows style guidelines from:

- the Royal National Institute for Blind People (RNIB);
- the Information Standard;
- the Patient Information Forum; and
- the Plain English Campaign.

Disclaimer

We have made every effort to give accurate information but there may still be errors or omissions in this leaflet. BAUS cannot accept responsibility for any loss from action taken (or not taken) as a result of this information.

PLEASE NOTE

The staff at BAUS are not medically trained, and are unable to answer questions about the information provided in this leaflet. If you do have any questions, you should contact your urologist, specialist nurse or GP.