NHS
Royal Berkshire
NHS Foundation Trust

Treating your thyroid nodule by percutaneous radiofrequency ablation (RFA)

This leaflet tells you about the procedure known as "percutaneous radiofrequency ablation" and will explain what is involved, including the benefits and possible risks. It is not meant to replace informed discussion between you and your doctor but can act as a starting point for such a discussion. Further sources of information are suggested at the end of the leaflet. Your consultant will be happy to give you time to ask all the questions you need to. If you have any other queries please call the Radiology Department on 0118 322 7961.

Benign (non-cancerous) thyroid nodules

Thyroid nodules are a very common cause for a lump in the neck. The vast majority are confirmed to be benign by tests including an ultrasound and a needle test (fine needle aspiration or FNA). A few of these benign nodules grow to a size that can cause local symptoms such as pressure or pain or become unsightly to an individual. Radiofrequency ablation is a treatment option for these types of nodules.

How are benign thyroid nodules normally treated?

Benign thyroid nodules can be left alone if they are not causing symptoms which are troublesome to the patient. When treatment is required the standard option is surgery with removal of either part of or the whole thyroid gland. Surgery is not suitable for all patients. Some patients may not be fit enough for surgery and others may not wish to undergo a surgical procedure.

What is percutaneous radiofrequency ablation?

"Percutaneous" means through the skin and ablation means destruction (of tissue). "Percutaneous radiofrequency ablation" (or RFA) is therefore a technique where radiofrequency energy (an electric current) is used to generate heat to destroy tumour cells. The energy to heat the tissue is delivered through thin needles (also called electrodes). These needles are inserted through the skin into the tumour under local anaesthetic with ultrasound guidance. We have used RFA safely in other organs for almost 10 years at the Royal Berkshire Hospital. Thyroid RFA has been performed at specialist centres abroad for many years and more recently has gained popularity in the UK.

Why am I being offered percutaneous radiofrequency ablation?

Percutaneous radiofrequency ablation is now an approved procedure for the treatment of benign thyroid nodules (or tumours) by the National Institute for Health and Care Effectiveness (NICE). Evidence shows it to be safe and effective in shrinking thyroid nodules.

RFA should be considered in patients who are unsuitable for high risk surgery or wish to avoid having surgery for their benign thyroid nodule. Your consultant will be considering this procedure for you only after a detailed clinical assessment. This will include an ultrasound scan, needle testing the nodule (sometimes on more than one occasion) and, of course, after discussion with you. Your consultant will also explain the alternatives including surgery or simply monitoring the nodule if symptoms are not sufficiently troublesome.

There are benefits and risks related to any treatment option and these will be explained in detail when you are consented for the procedure.

Benefits of percutaneous radiofrequency ablation

- Less invasive procedure than surgery.
- Performed under local anaesthetic with the option of a short acting sedative and pain killers during the procedure given through a cannula in the vein.
- Performed as a day case rather than overnight admission for surgery.
- Shorter recovery time than surgery.
- Avoids a surgical scar.
- Low rate of complications.
- Normally preserves thyroid function, avoiding the need for thyroid replacement tablets (Thyroxine).

Risks of percutaneous radiofrequency ablation

- All treatments and procedures have risks and these will be discussed in detail with you by the doctor.
- Serious complications are rare. The main risks are bleeding, hoarse voice due to nerve bruising, skin burns and infection. Infection can be a delayed problem and present with swelling, pain and redness.
- Rare serious complications include damage to the food pipe (oesophagus), wind pipe (trachea) and nerves to the voice box (vocal cords). The risk of permanent injury to the voice box nerve leading to alteration in the voice is less than 1% (less 1 in 100 chance).
- Unlike surgery larger nodules could require more than one treatment for effective nodule shrinkage. There is also a risk of nodule recurrence. The doctor can discuss individual risks with you.

Who will be doing the percutaneous thermal tumour ablation?

An interventional radiologist (doctor who performs image guided procedures) performs the procedure and works closely with the ENT surgeon in ensuring your suitability.

Where will the procedure take place?

The procedure is performed in the X-ray (Radiology) Department in the ultrasound room.

How do I prepare for percutaneous thermal ablation?

You will be given an appointment to attend a pre-procedural consultation. All preparation details will be discussed with you and you will be able to ask questions of your own. If we have any concerns about your blood clotting or thyroid function we may also carry out some blood tests.

What happens on the day of the percutaneous thermal ablation?

Most patients are admitted on the day of the procedure. If we are giving sedation for the procedure we will ask you to be nil by mouth for solid food for six hours and fluids for four hours prior to the procedure. You can still take all your usual medications with some water even within four hours of the procedure (other than those medicines you have been advised to stop).The nurse will make sure you are in a hospital gown, check your blood pressure and confirm your details. A cannula (plastic tube) will be inserted into your arm. Your consent for the procedure will be confirmed and you will have an opportunity to ask any questions.

What happens during the percutaneous thermal ablation procedure?

You will be lying down comfortably for the procedure. Some sticky pads will also be placed on your thighs which are required for the device to deliver the energy for treatment. Procedures are performed under local anaesthetic and often under conscious sedation. Conscious sedation is when we give sedative and pain killing drugs through the vein to make you more relaxed but you are still awake. Once painkillers have been given, the treatment needle is inserted through a tiny incision. Several small ablations / heat treatments are performed using the ultrasound scan to guide the needle and monitor the ablation. The whole procedure takes about one hour but possibly longer if the nodule is large in size. Once completed, the needle is removed and a plaster is placed over the small incision.

Will it hurt?

Local anaesthetic is injected using a very small needle and stings when first injected. The drugs given through the vein are both painkillers and sedatives and therefore make you more comfortable and relaxed but you should still be awake or possibly slightly sleepy. During the procedure you will be constantly monitored to ensure you are comfortable. More pain relief can be provided if required.

What happens afterwards?

You will be transferred to a recovery area. An icepack will be applied to your neck to help with any discomfort and mild swelling. Any soreness from the treatment can also be treated with additional painkillers. As soon as you feel able to eat and drink, you may do so. You will normally stay in the recovery area for two hours before discharge. Before you go home you will receive an information leaflet on aftercare. You should be off work for a couple of days after treatment. You will come back in three months to have a repeat ultrasound scan and ensure your recovery is going well. You will be invited for further ultrasound scans at intervals which will depend on your progress. Nodule shrinkage occurs slowly over several weeks and months.

How successful is percutaneous thermal ablation?

There are no studies which directly compare percutaneous RFA to surgery in the treatment of benign thyroid nodules as yet. Evidence from many published studies looking at RFA has shown it to be safe and highly effective in tumour shrinkage.

The strength of evidence means that RFA is now approved by the National Institute for Health and Care Excellence (NICE) in the treatment of benign thyroid nodules.

And finally…

Some of your questions should have been answered by this leaflet but remember this is only a starting point for discussion about your treatment with the doctors looking after you.

Make sure that you are satisfied that you have received enough information about the procedure before you sign the consent form.

Further information

National Institute for Health and Clinical Excellence (NICE) www.nice.org.uk. IPG 562. Ultrasound guided percutaneous radiofrequency ablation for benign thyroid nodules.

Contacting us

Radiology Department Tel 0118 322 7991.

Radiology Day Case Unit Tel 0118 322 8368 (Monday-Friday 8.30am-5pm).

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

RAD_0093
Interventional Radiology, May 2023
Next review due: May 2025