NICE National Institute for Health and Care Excellence

NICE guidance

Percutaneous ultrasound-guided microwave ablation for symptomatic benign thyroid nodules

Interventional procedures guidance
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www.nice.org.uk/guidance/ipg743

1 Recommendations

1.1 Evidence on the safety of percutaneous ultrasound-guided microwave ablation for symptomatic benign thyroid nodules shows some well-recognised complications. Evidence on efficacy is adequate. Therefore, this procedure can be used provided standard arrangements are in place for clinical governance, consent and audit. Find out what standard arrangements mean on the NICE interventional procedures guidance page.

1.2 Patient selection should be done by a multidisciplinary team.

1.3 This procedure should only be done by a clinician with experience in the procedure and specific training in thyroid ultrasound.

1.4 Patients should be assessed to exclude thyroid cancer before the procedure.

1.5 Immediate support should be available to deal with airway complications.

2 The condition, current treatments and procedure

The condition

2.1 Thyroid nodules may be cystic, colloid, hyperplastic, adenomatous, or cancerous. Most are benign and often asymptomatic. They may be single (solitary nodule) or multiple (multinodular goitre). Some thyroid nodules produce thyroxine or triiodothyronine and cause thyrotoxicosis. These are called hyperfunctioning or toxic thyroid nodules.

Current treatments

2.2 Benign thyroid nodules may need treatment if they are symptomatic or causing cosmetic problems. Conventional treatment includes surgery. Less invasive alternatives to surgery include ethanol ablation, percutaneous laser ablation, high intensity focused ultrasound ablation and radiofrequency ablation.

The procedure

2.3 Ultrasound-guided percutaneous microwave ablation for symptomatic benign thyroid nodules is a minimally invasive procedure done in an outpatient setting using local anaesthesia. The aim is to reduce symptoms and improve cosmetic appearance by making the nodule smaller while preserving thyroid function and with fewer complications than surgery.

2.4 The patient is placed in the supine position with moderate neck extension. A microwave antenna is inserted into the nodule using

ultrasound guidance to visualise the electrode during the procedure. Once in position, the microwave antenna is activated to heat and destroy the tissue by coagulative necrosis. The antenna may be repositioned to ensure that most of the nodule is ablated.

3 Committee considerations

The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 11 sources, which was discussed by the committee. The evidence included 3 systematic reviews, 4 non-randomised comparative studies and 4 case series. It is presented in the summary of key evidence section in the interventional procedures overview. Other relevant literature is in the appendix of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: symptom relief, cosmetic improvement and nodule volume reduction.

3.3 The professional experts and the committee considered the key safety outcomes to be: pain, bleeding, damage to adjacent structures and inadvertent treatment of malignant nodules.

3.4 One patient organisation submission and 2 commentaries from patients who have had this procedure were received and discussed by the committee.

Committee comments

3.5 The committee noted that this procedure can be done with cooled and uncooled microwave ablation devices. Most of the evidence it reviewed on the safety and efficacy of this procedure came from cooled microwave ablation devices.

3.6 The committee was informed that using uncooled microwave ablation devices means smaller needles can be used.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

Accreditation