

Ultrasound Guided Radiofrequency Ablation of Thyroid Nodules

Introduction

Ultrasound-guided radiofrequency ablation of thyroid nodules

Indications

Benign thyroid diseases with pressure or aesthetic symptoms

Intended Benefits and Expected Outcome

1. Reduction in tumour volume and associated symptoms
2. Control of nodular growth
3. There is a chance of incomplete removal of disease and regrowth
4. Patients may need more than one session of radiofrequency ablation
5. Radiofrequency ablation may render future surgery more difficult

Mean Reduction in Nodule Volume

33-58% at 1 month; 51-85% at 6 months; 70-90% at 1 year

Contraindications

1. Malignant thyroid tumours
2. Nodules suspicious of malignancy
3. Pregnancy
4. Bleeding Disorder
5. Pacemaker

The Procedure

1. Injection of subcutaneous and pericapsular local anaesthesia
2. Conscious sedation maybe required
3. Needle radiofrequency ablation under ultrasound guidance
4. Patients should communicate with operating surgeon upon excessive heat or pain
5. Patients may be asked to speak to monitor potential voice changes
6. The procedure usually lasts 30-45 minutes

Risk and Complication

There are always certain side effects and risks of complications of the procedure. Medical staff will take every preventive measure to reduce their likelihood.

Potential Risks and Complications (% risk)

- | | |
|---|--|
| 1. Marginal regrowth (5-24% <i>risk</i>) | 8. Rupture of Nodule (<0.1% <i>risk</i>) |
| 2. Pain (2.5% <i>risk</i>) | 9. Brachial plexus injury (<0.1% <i>risk</i>) |
| 3. Voice change (1% <i>risk</i>) | 10. Sympathetic chain injury
(<0.1% <i>risk</i>) |
| 4. Haematoma (1% <i>risk</i>) | 11. Phrenic nerve injury (<0.1% <i>risk</i>) |
| 5. Skin burn (0.3% <i>risk</i>) | 12. Tracheal or oesophageal injury
(<0.1% <i>risk</i>) |
| 6. Abscess formation (<0.1% <i>risk</i>) | |
| 7. Hypothyroidism (<0.1% <i>risk</i>) | |

Before the Procedure

Patient should:

1. Inform doctor of any medical condition e.g. diabetes mellitus, heart disease, hypertension and any regular medication, including herbs and dietary supplement.
2. Stop food and drink if needed as instructed by doctor or nurse
3. Other special preparation or investigation before the procedure

After the Procedure

1. Mild compression of the neck with an ice pack for 5 minutes to prevent local bleeding and thermal injury to the skin and observe for 30 minutes
2. May need analgesic for pain and discomfort after the procedure
3. Can usually be discharged on the same day

Alternative Managements

1. Open or endoscopic surgical thyroidectomy
2. Conservative management and observation

Consequences of No Treatment

1. Progression of tumour
2. Persistent or progressive pressure or aesthetic symptom

Follow Up

1. Take medication and see the doctor as instructed
2. Resume normal activities if there is no more neck pain and after medical assessment
3. Avoid excessive head and neck movement
4. Seek medical attention at the nearby emergency department or the related ENT clinic if you have fever, shortness of breath, marked neck pain, swelling or bleeding
5. Attend regular follow-up to ensure no nodule regrowth

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.