

## THYROID

HIFU FOR THYROID  
NODULE ABLATION

The results of the first study assessing the feasibility of using a high-intensity focused ultrasound (HIFU) approach for ablation of human thyroid nodules have been published in *Thyroid*.

Esnault *et al.* investigated whether an optimized HIFU device (Theraclion, Paris, France) could be an effective method of ablating benign thyroid nodules in humans without a negative impact on neighboring structures. This open, single-center study included 25 patients (5 men and 20 women, aged 25–82 years) with multinodular goiter who were planned to undergo thyroidectomy between 2003 and 2006.

The thyroid nodules selected for ablation were all benign, with a mean diameter  $\leq 8$  mm and located at least 3 mm from the trachea, esophagus, recurrent nerve, carotid artery and skin. Adverse events were recorded during and after patients underwent HIFU ablation. After thyroidectomy, the nodules that had been targeted by HIFU were pathologically analyzed to determine the percentage of nodule destruction.

Three patients discontinued treatment owing to skin microblisters or pain. Ultrasonography showed that 16 of the remaining 22 patients had changes likely to result from HIFU treatment. The percentage of nodule destruction ranged from 2% to 80%, with 5 patients having more than 20% of nodule damage attributed to HIFU. Macroscopic and histological examinations confirmed neighboring structures were unaffected.

HIFU ablation could become a useful minimally invasive treatment option for thyroid nodule destruction, although the small number of patients treated with this approach currently precludes comparison with other alternatives to thyroid surgery, such as ethanol injection, laser ablation or radiofrequency ablation. More studies are currently underway to improve the HIFU technique, by investigating nodule changes at longer follow-up times.

Rosanne Diaz

**Original article** Esnault, O. *et al.* High-intensity focused ultrasound ablation of thyroid nodules: first human feasibility study. *Thyroid* doi:10.1089/thy.2011.0141