

Contrast-enhanced ultrasound for localizing parathyroid adenomas in patients with primary hyperparathyroidism: an ongoing study

SANNE HØXBROE MICHAELSEN(1), M BAY(1), VE NIELSEN(1), AR MADSEN(1), S VESTERGAARD(2), O GRAUMANN(3,4), O GERKE(2), H DØSSING(1), C GODBALLE(1,5)

1. Department of ORL, Head and Neck Surgery, Odense University Hospital
2. Department of Nuclear Medicine, Odense University Hospital
3. Department of radiology, Odense University Hospital
4. Institute of Clinical Research, University of Southern Denmark
5. University of Southern Denmark

Introduction:

The purpose of this ongoing project is to examine, in a non-inferiority study, whether the combination of conventional ultrasound (US) and contrast-enhanced ultrasound (CEUS) can replace the radiation-based imaging modalities that are currently used to localize pathological parathyroid glands prior to surgical removal in patients with primary hyperparathyroidism at the Department of Otorhinolaryngology, Head and Neck Surgery at Odense University Hospital.

Methods:

The study is designed as a prospective paired cohort study where each patient serves as his or her own control. Patients with primary hyperparathyroidism referred for parathyroidectomy will be offered a CEUS examination in addition to standard clinical imaging, which consists of US and a dual-tracer 99mTechnetium-per technetate/ 99mTechnetium-sestamibi subtraction scintigraphy with SPECT/CT fusion imaging. The CEUS examiner will be blinded to the radiation-based findings. With the histopathological result of the surgically removed specimen(s) as the reference standard, the sensitivity, specificity, positive and negative predictive value of US+CEUS will be compared to that of the current imaging regimen for localizing pathological parathyroid glands to the correct side, quadrant and “Odense Classification”.

Results:

A total of 60 patients have been included in the pilot study and a further 112 patients will be included in the main study. As of February 29th 2020, 70 patients have been examined with CEUS and 36 patients have been parathyroidectomized. Preliminary results will be presented at DSOHH.

Discussion:

This study will explore the feasibility of adopting CEUS in combination with conventional ultrasound as the first-line preoperative imaging modality for patients with primary hyperparathyroidism.

email: sannedenmark@gmail.com