

Ultrasound characteristics (EU-TIRADS) as most important factor in the evaluation of thyroid nodules

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Background:

The characterisation of thyroid nodules is still an ongoing dilemma. Due to new technical tools as elastography, MIBI scintigraphy etc. the clinical data grow but the importance of the new diagnostic procedures must be ruled out. These findings are summed using reporting systems (EU-TIRADS1). Thus we analysed the features in our group of patients that were sent to thyroid surgery in 2016 and 2017 and compared to the histological findings.

Methods:

The patients of our department, that is spread over the region Fulda, Rotenburg, Lauterbach and Gießen (central Hessa), were registered and characterized after histological determination. The parameters sex, age, TNM stage, time to surgery, ultrasound characteristics, EU-TIRADS, scintigraphy, volume of the total thyroid gland, volume of the nodule, elastographic characterisation, TSH-level, fT4 level, TPO-antibody, hTG (each BRAHMS), and calcitonine (IBL) were documented and ultrasound and scintigraphic findings were analysed by two different experienced investigators. The statistical analysis of MANOVA was performed using Statistica 10 with a significance level of $p < 0,05$.

Results:

105 patients were sent to surgery, 55 patients suffered from thyroid carcinoma (10 medullary, 39 papillary and 6 follicular thyroid carcinoma). The mean age was $47,4 \pm 17,4$ years. In the MANOVA evaluation the following p values could be measured age $p < 0,1$, age $p < 0,39$, echogenicity of the nodule $p < 0,000$, interior perfusion $p < 0,009$, halo $p < 0,006$, margins $p < 0,01$, total thyroid volume $p < 0,08$, nodule volume $p < 0,29$, scintigraphic finding as cold nodule $p < 0,09$, TSH $p < 0,009$, fT4 $p < 0,06$, TPO $p < 0,06$, hTG $p < 0,07$, calcitonine 0,03. The statistical analysis itself reached significance levels $p < 0,000$, R^2 0,998.

1) Russ G.m· Bonnema S.J. · Erdogan M.F. · Durante C. · Ngu R.· Leenhardt L. European Thyroid Association Guidelines for Ultrasound Malignancy Risk Stratification of Thyroid Nodules in Adults: The EU-TIRADS, Eur Thyroid J 2017; 6: 225-237.