In the presence of a solid thyroid nodule, the Endocrine Societies Guidelines recommend the use of ultrasound-guided fine needle aspiration biopsy (FNAB) in order to establish a proper therapeutic attitude. American Thyroid Association (ATA) stated that FNAB is the procedure of choice for the evaluation of thyroid nodules. Analyzing the indications at AACE, ETA, ATA and the Korean Guideline, it can be observed that there are some differences for FNAB indications, especially concerning the size and the category of nodules that should be referred to FNAB.

**OBJECTIVES**

The TI-RADS system, proposed by Russ, with 5 conventional ultrasound parameters and 1 elastography parameter, is a useful tool in the risk stratification of thyroid nodular masses. It may be used for reducing the number of unnecessary FNAB evaluations. Quantitative elastography brings constant, valuable but also clear criteria in the TI-RADS model of risk stratification. Further studies are required in order to validate the TI-RADS analysis for daily clinical endocrine practice.

**METHODS**

- Patients with uninodeular or polinodular goiter examined in our Elastography Unit between January 2013–June 2014;
- From the total of 432 evaluated cases, 174 cases were operated by December 2014;
- Histopathological analysis was performed in all cases and was considered the golden standard diagnosis;
- Conventional Gray scale, Ultrasound (US), Doppler Ultrasound, and strain elastography (SE) were performed prior surgery by one operator with more than 10 years experience in conventional ultrasound and 5 years in elastography, maximum 2 month before surgery;
- The surgical indication was made in the presence of large nodules (>4 ml), positive FNAB result (Bethesda IV, V, and VI), compression effects, functional autonomy (defined by suppressed TSH levels), and multinodularity;
- US and SE were performed using Hitachi Preirus (Hitachi Medical Corporation, Tokyo, Japan) machine with 6-13 MHz linear probe. SE was performed using recommendations of Rago et al. with mild external pressure, always checked on the pressure scale, using only 3-4 grade images and loops. The Tsukuba (Ueno-Itoh) classification was used for qualitative analysis of SE. The nodules were classified according to simplified TI-RADS system described by Russ;

**RESULTS**

From the total 174 analyzed cases, 29 (16.7%) were histologically proven to be malignant: papillary carcinoma 23 cases, 3 cases of follicular carcinoma and 2 medullar carcinoma: 1 isolated case and 1 familial case.

**CONCLUSIONS**

The TI-RADS system, proposed by Russ, with 5 conventional ultrasound parameters and 1 elastography parameter, is a useful tool in the risk stratification of thyroid nodular masses. It may be used for reducing the number of unnecessary FNAB evaluations. Quantitative elastography brings constant, valuable but also clear criteria in the TI-RADS model of risk stratification. Further studies are required in order to validate the TI-RADS analysis for daily clinical endocrine practice.

**References**

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