Ultrasound-guided thyroid fine needle aspiration with rapid on-site evaluation of adequacy: Data from the clinic of Endocrinology of a Greek tertiary general hospital in 2013.

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Introduction

Ultrasound imaging is a fundamental diagnostic tool in the characterization of thyroid nodules.

Ultrasound-guided fine needle aspiration biopsy (US-FNAB) enables selective sampling of thyroid follicular cells while minimizing potential complications.

Inadequate specimen sampling can lead to FNAB repeat.

Objective

The aim of this study was to evaluate the morphological and cytological characteristics of thyroid nodules with US-FNAB and rapid on-site evaluation of adequacy (ROSE) performed during 2013.

Methods

- Two independent endocrinologists (SF, LP) evaluated 171 U/S nodule characteristics.
- Decision of US-FNAB was based on size, rate of growth, echogenicity, microcalcifications, vascularity, irregular margins and max/min diameter.
- ROSE was performed after alcohol fixation on glass slides and staining with Hemacolor solution.

Results

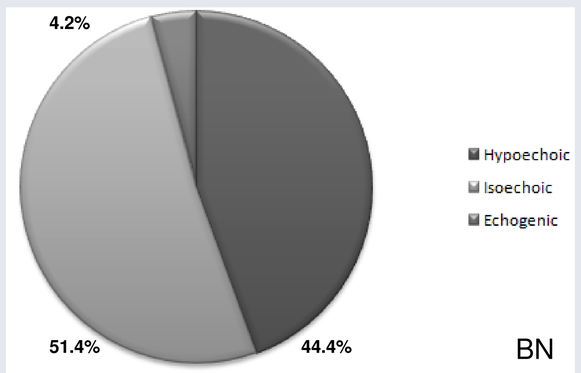
- Adequacy rate was 92.4%.
- Thyroid nodules were reported as category I (7.6%), II (84.21%), III (0.58%), IV (1.17%), V (2.34%) and VI (4.09%) based on Bethesda criteria.

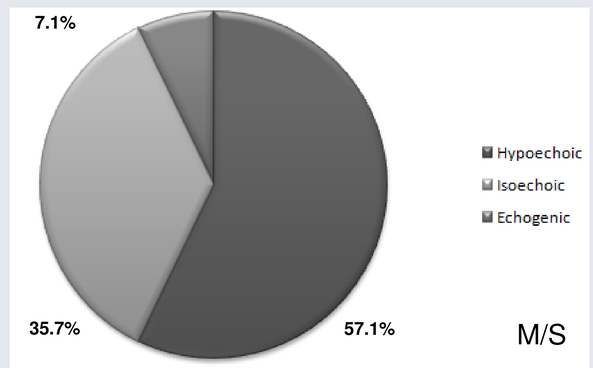
	Total (171)	BN (144)	M/S (14)	*P* value
Age (years)	54.81±12.74	54.9±11.66	53±23.26	NS
Max. diameter (cm)	2.2±0.98	2.2±0.97	2.24±1.02	NS
Max/min diameter		1.84±0.56	1.63±0.37	NS
Right	74	63	6	
Left	88	72	8	
Isthmus	8	8	0	
Ectopic	1	1	0	

Table 1: Characteristics of patients with benign nodules (BN) and those with malignant/suspicious ones (M/S) *p*: BN vs M/S

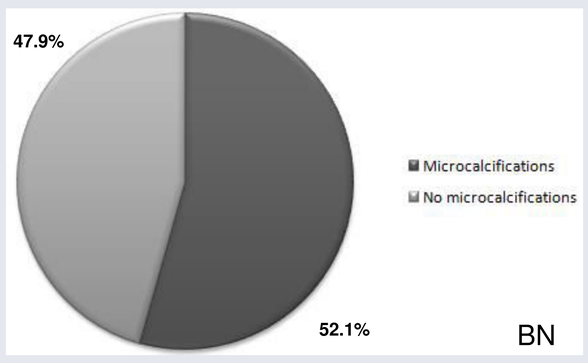
- Positive correlation between age and nodule diameter was documented in the BN (p=0.008) and all-patients group (p=0.003).

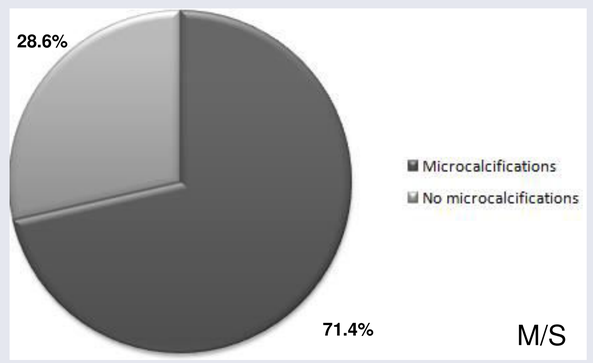
Results



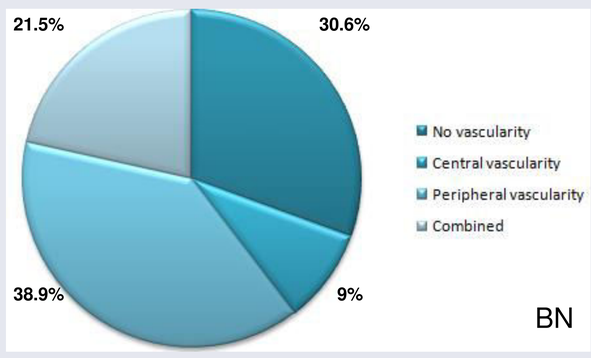


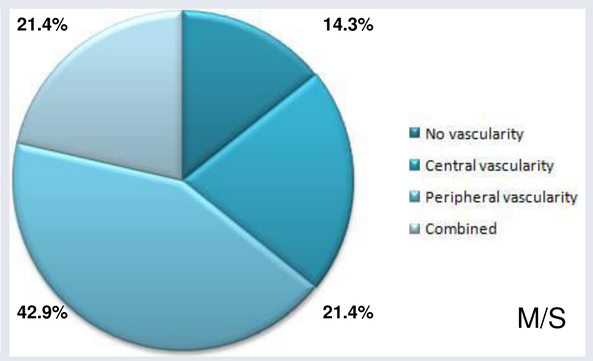
Echogenicity in BN and M/S nodules (*p*=NS)



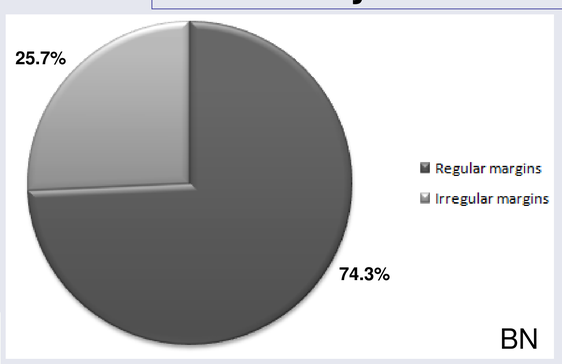


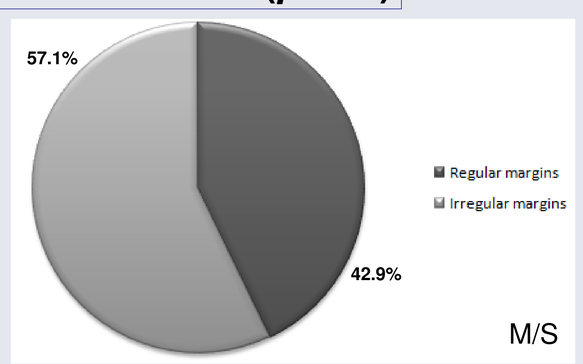
Presence of microcalcifications in BN and M/S nodules (*p*=NS)



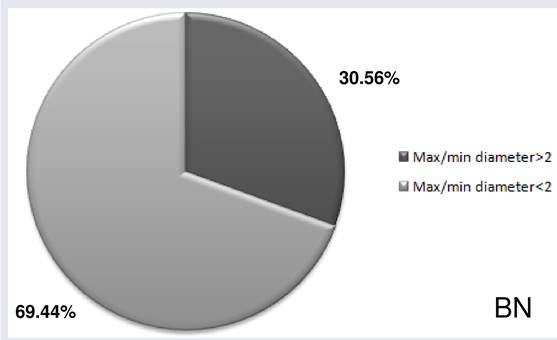


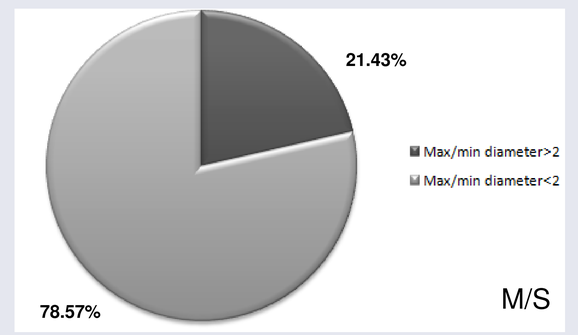
Vascularity in BN and M/S nodules (*p*=NS)





Irregular margins in BN and M/S nodules (*p*=0.008)





Max/min diameter in BN and M/S nodules (*p*=NS)

Conclusions

- Thyroid ultrasound and US-FNAB provide direct, real time information.
- ROSE can provide a high adequacy rate, saving time and economical resources while minimizing patient inconvenience.
- Regarding US characteristics, only the proportion of nodules with irregular margins reached a significant difference between BN and M/S.

References

Witt BL and Schmidt RL 2013;Thyroid 23: 428-435.