MALIGNANCY IS ASSOCIATED WITH MICROCALCIFICATION AND AP/T RATIO IN ULTRASONOGRAPHY, BUT NOT WITH HASHIMOTO'S THYROIDITIS IN HISTOPATHOLOGY IN PATIENTS WITH THYROID NODULES EVALUATED AS BETHESDA CATEGORY III (AUS/FLUS) IN CYTOLOGY

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INTRODUCTION

➢ The predictors of malignancy are important for decision of appropriate management in nodules with atypia of undetermined significance/follicular lesion of undetermined significance (AUS/FLUS).

➢ Our aim was to determine the ultrasonographical, clinical and biochemical predictors of malignancy in these patients.

METHODS

➢ A total of 427 patients with Bethesda Category III (AUS/FLUS) thyroid nodules were included in this retrospective study.

➢ We divided the nodules into two subgroups according to the histopathology as benign and malignant, and compared the preoperative ultrasonographical, clinical and biochemical findings.

RESULTS

➢ In overall, 427 patients with 449 AUS/FLUS nodules that went on surgery, the rate of malignancy was 23.4% (105/449).

➢ When evaluated seperately, the rate of malignancy was 25.8% in nodules with AUS (82/318) and 17.6% in nodules with FLUS (23/131) (p=0.061).

➢ The vast majority of malignant specimens in histopathology consisted of papillary thyroid carcinoma (PTC) (n=91, 86.7%).

➢ Preoperative ultrasonographic features of 105 malignant nodules in histopathology were compared with the 344 benign nodules (Table).

➢ AP/T ratio was significantly higher in malignant group compared to benign group (p=0.013).

➢ In multiple logistic analyses, we found that AP/T ratio, and microcalcification were independently correlated with malignancy (p<0.05).

➢ Although, in univariate analysis, presence of thyroid autoantibodies and Hashimoto's thyroiditis in histopathology were higher in malignant group significantly, we did not find any correlation between malignancy and Hashimoto's thyroiditis in histopathology in multivariate analysis (p>0.05).

Table. Comparison of the preoperative ultrasonographic features of AUS/FLUS nodules with malignant and benign final histopathology

	Malignant (n=105)	Benign (n=344)	p
Nodule AP diameter (mm)	14.15 7.75	13.82 7.67	0.700
Nodule transverse diameter (mm)	18.39 12.02	18.90 16.66	0.770
Nodule longitudinal diameter (mm)	22.77 16.52	23.14 16.52	0.840
Nodule volume (mL)	1.26 (range 0.06-88.28)	1.58 (range 0.06-157.36)	0.493
Nodule AP/T ratio	0.83 0.21	0.77 0.20	0.013*
Nodule location			0.659
Right lobe	58 (55.2%)	194 (56.4%)	
Left lobe	43 (41.0%)	130 (37.8%)	
Isthmus	4 (3.8%)	20 (5.8%)	
Texture			0.525
Solid	103 (98.1%)	331 (96.2%)	
Cystic	1 (1.0%)	10 (2.9%)	
Mixed	1 (1.0%)	3 (0.9%)	
Echogenicity			0.007*
Isoechoic	46 (43.8%)	174 (50.6%)	
Hypoechoic	15 (14.3%)	18 (5.2%)	
Isoechoic+hypoechoic	44 (41.9%)	152 (44.2%)	
Microcalcification	40 (38.1%)	84 (24.4%)	0.006*
Macrocalcification+microcalcification	22 (20.9%)	39 (11.3%)	0.006*
Macrocalcification	10 (9.5%)	21 (6.1%)	0.116
Hypoechoic halo	43 (40.9%)	128 (37.2%)	0.447
Irregular margins	56 (53.3%)	185 (53.8%)	0.853
Presence of HT	n=100	n=322	0.451
	37 (37.0%)	106 (32.9%)	

*p<0.05, AP/T ratio : Anterior-posterior/Tranverse ratio, volume is calculated by multiplying AP(cm) x longitudinal diameter(cm) x π/6, Presence of HT: presence of Hashimoto's thyroiditis

CONCLUSION

➢ In Bethesda Category III nodules with higher AP/T ratio and microcalcification, surgery might be considered as the first theurapeutic option instead of repeat FNAB or observation.

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Thyroid (non-cancer)

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