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## AIM

➤Thyroid fine needle aspiration biopsy (FNAB) is an important diagnostic method to evaluate thyroid nodules.

➤In FNAB cytological examination; it is reported that 70% of nodules is benign, 4% malignant, 10% suspicious and 17% insufficient material (non-diagnostic).

➤Despite all this, the biopsy of thyroid nodules reported as nondiagnostic at least 2 or 3 times causes indication for the operation.

➤We aimed to assess ultrasonographical and histopathological data of thyroid nodules with repeated non-diagnostic cytology results.

## MATERIAL AND METHOD

➤Seventy-five patients with nodular thyroid disease were enrolled in this study.

➤ Thyroid fine needle aspiration biopsy (FNAB) results were reported as non-diagnostic at least for 2-3 times in these patients.

➤ Operation indications were large nodule, ultrasonographically suspicious nodule, high elastosonography score or strain index and family history of thyroid cancer.

➤Demographical features of these patients and ultrasonographical features of nodules were evaluated.

## RESULTS

➤53 (70.7%) patients were female and 22 (29.3%) were male.

➤ There were 59 patients with multinodular goiter (MNG), 8 patients with nodular goiter (NG), 7 patients with Graves disease and MNG.

➤ 45 patients (60%) were euthyroid, 25(33.3%) had hyperthyroidism and 5 (6.7%) had hypothyroidism.

➤In 41 patients (54.7%) nodules were localized in the right lobe, while in 34 (45.3%) patients in the left lobe (Table 1).

➤ Ultrasonographically, microcalcification was found in 30 nodules (40.0%) and macrocalcification was found in 20 nodules.

➤Irregular margins were observed in 45 (60%) nodules and hypoechoic halo was observed in 28 (37.3%) nodules. 17(22.7%) nodules had peripheral vascularization and 1 (1.3%) nodule had peripheral macrocalcification.

➤Histopathologically 57 (76%) nodules were benign and 18 (24%) were malignant. Of malignant nodules 17 (94.4%) were papillary carcinoma, whereas 1 was follicular carcinoma.

➤Mean tumor diameter was 0.77±0.63 (range 0.1-2.2) cm. Vascular invasion, capsular invasion, extracapsular extension and multicentricity were detected in 1 (5.6%), 5 (27.8%), 1 (5.6%) and 6 (33.3%) patients, respectively.

**Table 1.** Ultrasonography features and histopathological findings in patients with repeated non-diagnostic cytology results

	n	%
<b>Nodule localization</b>		
Right lobe	41	54.7
Left lobe	34	45.3
<b>Calcifications</b>		
Macrocalcification	30	40.0
Microcalcification	20	26.7
<b>Irregular margins</b>	45	60.0
<b>Hypoechoic halo</b>	32	37.3
<b>Peripheral vascularisation</b>	17	22.7
<b>Peripheral macrocalcification</b>	1	1.4
<b>Echogenicity</b>		
Isoechoic	43	57.3
Hypoechoic	32	42.7
<b>Texture</b>		
Solid	40	53.3
Mixed	34	45.3
Cystic	1	1.3
<b>Histopathological findings</b>		
Benign	57	76.0
Malignant	18	24.0
Papillary tm	17	94.4
Follicular tm	1	5.6
Vascular invasion	1	5.6
Capsular invasion	5	27.8
Extracapsular invasion	1	5.6
Multicentricity	6	33.3

## CONCLUSION

➤ In our study we found the rate malignancy 24% as high for thyroid nodules which were performed FNA biopsy and reported repeated non-diagnostic cytology results.

➤Therefore, we conclude that when treatment is planned for the patients that have non-diagnostic cytology possibility of high rate of malignancy as we found in this study may be considered.