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INTRODUCTION

➤ Ultrasonographically determined nodule diameter plays an important role in the differential diagnosis of thyroid nodules and decision of the surgical approach. Whether this diameter represents postoperative tumor diameter is not clear.

➤ We aimed to compare ultrasonographical and histopathological diameters of lesions in differentiated thyroid cancer (DTC) and also tried to find out ultrasonography (US) features that can predict the discordance between two diameters.

METHODS

➤ Data of patients with histopathologically confirmed DTC between June 2007 and June 2014 were reviewed retrospectively.

➤ Nodules evaluated by preoperative US were matched with histopathologically examined nodules according to localization and size.

➤ Incidental tumors and nodules that can not be matched by US and histopathology reports were excluded.

➤ Preoperative US and postoperative histopathological diameters were compared and difference between two diameters which was defined as (Δ) was determined for each lesion.

RESULTS

➤ There were 562 patients (110 male and 452 female) with a mean age of 48.0 ± 12.8 . Among 607 tumor foci, 542 (89.3%) were papillary thyroid cancer, 42 (6.9%) were follicular thyroid cancer and 23 (3.8%) were thyroid tumor of unknown malignant potential.

➤ Overall, mean US diameter was significantly higher than histopathological diameter (21.0 ± 15.6 mm vs 17.3 ± 13.6 , $p < 0.001$). US diameter was higher than tumor diameter in 444 (73.1%), equal in 15 (2.5%) and lower in 148 (24.4%) nodules

➤ In nodules with US diameter > tumor diameter, regular margins, mixed texture, isoechoic appearance, presence of halo were related with higher (Δ) values (Table 1). In nodules with US diameter < tumor diameter, macrocalcification were related with higher (Δ) values.

Table -1:

US features	US diameter > tumor size (n=444)			US diameter < tumor size (n=148)		
	N	Δ (mm)	P	N	Δ (mm)	p
Component						
Cystic	7	7.9 ± 5.2	0.005	0	$-3,4 \pm 4,2$	
Solid	431	6.4 ± 8.3		148		
Mix	6	16.8 ± 9.1		0		
Border regularity						
Regular	191	7.3 ± 8.5	0.007	40	$-3,7 \pm 4,7$	0.998
Irregular	253	6.0 ± 8.2		108	$-3,4 \pm 4,0$	
Echogenicity						
Isoechoic	172	8.4 ± 9.5	0.001	51	$-3,2 \pm 3,1$	0.751
Hypoechoic	93	4.4 ± 5.7		32	$-2,6 \pm 2,0$	
Isohypoechoic	179	6.0 ± 8.1		65	$-4,2 \pm 5,5$	
Halo						
Present	136	7.8 ± 8.5	0.001	30	$-3,7 \pm 5,3$	0.509
Absent	308	6.1 ± 8.3		118	$-3,5 \pm 3,9$	
Microcalcification						
Present	196	7.1 ± 9.9	0.985	70	$-3,8 \pm 4,0$	0.213
Absent	248	6.2 ± 7.0		78	$-3,2 \pm 4,4$	
Macrocalcification						
Present	142	7.7 ± 10.8	0.646	50	$-4,0 \pm 3,1$	0.013
Absent	302	6.1 ± 6.9		98	$-3,3 \pm 4,7$	
Coexisting thyroiditis						
Present	153	6.4 ± 9.4	0.256	58	$-3,9 \pm 4,5$	0.250
Absent	291	6.7 ± 7.8		90	$-3,3 \pm 4,0$	

DISCUSSION

➤ Ultrasonographically determined diameter is higher than histopathologically determined size in a considerable ratio of DTCs. It might be helpful to consider this discordance while deciding extent of surgery in these patients.