



DOES A NORMAL THYROID ULTRASOUND IMAGE ALWAYS ACCOMPANY NORMAL THYROID FUNCTION TEST RESULTS?



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INTRODUCTION

- Nowadays, ultrasonography (USG) is being used indispensable and commonly in the diagnosis of thyroid diseases.
- Heterogeneous appearance of thyroid parenchyma is associated with thyroid autoantibody positivity and hypofunctioning of thyroid gland. On the other hand, it is not determined whether thyroid parenchyma appearing quietly normal echogenicity on USG is related to presence normal thyroid function tests or otherwise.
- The objective of our study was to evaluate the relationship between normal thyroid USG appearance and thyroid function tests with thyroid autoantibodies.

- 83 cases with normal USG images (80.5%) had normal TSH levels and 7 cases in this group had positive Anti-Tg (8.4%) and 23 cases had positive Anti-TPO (27.7%) levels. Out of the heterogeneous parenchyma group composed of 115 cases; 46 patients (40%) had high TSH level and 9 of them (19.6 %) had positive Anti-Tg and 35 (76.1%) had positive Anti-TPO levels.
- We observed no differences between the groups regarding to free triiodothyronine (fT3) and free tetraiodothyronine (fT4) levels. Between age and thyroid volume statistically significant and positive correlation was found ($r=0.171$, $p=0.012$).

Table 1. In USG normal and heterogeneous group, distribution of antibody positive cases in which TSH levels are normal

	USG Normal	USG Heterogeneous
TSH normal	n=83	n=59
Anti TG (+)	7 (%8,4)	50 (%84,7)
Anti TPO (+)	23 (%27,7)	62 (%74,5)

MATERIAL AND METHODS

- Thyroid USG images of 218 patients and laboratory tests were evaluated prospectively. The participants were classified into two groups, homogeneous/ normoechogenic and the heterogeneous group, according to thyroid parenchyma appearance on USG.

RESULTS

- We acquired homogeneous images on 103 cases and heterogeneous images on 115 cases.
- Thyroid Stimulating Hormone (TSH) level, Anti-Thyroglobulin (Anti-Tg) and Anti-Thyroid peroxidase (Anti-TPO) titres and thyroid volume was found to be significantly higher in heterogeneous parenchyma group ($p<0.001$).

CONCLUSION

- The thyroid gland "normal" appearing on USG imaging, probably accompanies normal serum thyroid function tests and negativity for thyroid antibodies.
- According to our results, thyroid USG is a perfect device for predicting normal thyroid functions, which could probably avoid unnecessary future laboratory tests as well.