



Thyroid Hormone Resistance: A Case Report

PINAR SISMAN¹, HANDE PEYNIRCI¹ OZEN OZ GUL¹,
SONER CANDER², ESRANUR BULBUL³ ERDINC ERTURK¹, CANAN ERSOY¹

¹ULUDAG UNIVERSITY MEDICAL SCHOOL ENDOCRINOLOGY AND METABOLISM DEPARTMENT
²SEVKET YILMAZ TRAINING AND RESEARCH HOSPITAL ENDOCRINOLOGY AND METABOLISM DEPARTMENT
³ULUDAG UNIVERSITY MEDICAL SCHOOL INTERNAL MEDICINE DEPARTMENT

INTRODUCTION:

Classic thyroid hormone resistance (THR) occurs per every 400000 live birth. TRH should be considered along with thyroid-stimulating hormone (TSH)-producing adenomas when normal or high levels of TSH not consistent with hyperthyroidism is present.

CASE REPORT:

A 45-year old woman admitted to our institution with multiple solitary thyroid nodules. Her serum free thyroxine (fT4), free triiodothyronine (fT3) and TSH levels were high. In thyroid USG examination, it was found that there were 3-4 nodules in the right thyroid lobe sized 9*6.5 mm and nodules with hypoechoic solid nature which largest of them was 16*11 mm in the left thyroid lobe. Fine needle aspiration biopsy (FNAB) was performed on thyroid nodules and results were benign. Sella magnetic resonance imaging (MRI) was performed with diagnosis of secondary hyperthyroidism. In sella MRI, it was found that there was an adenoma sized 11*9*10 mm in pituitary gland. Other anterior pituitary hormone levels were normal. There were no eyesight pathology. L-thyroxin treatment was ceased due to the euthyroid status of the patient. During tests performed for excluding THR, it was found that alpha subunit (ASU) level was in normal range and molar ASU/TSH ratio was below 1. Then, TRH stimulation test was planned. TSH levels at 0, 15, 30, 45 and 60 min after TRH administration were obtained. It was observed that there was an extensive response consistent with THR in TSH levels with TRH test.

Patient was enrolled in follow-ups with the diagnosis of THR and non-functional hypophysis adenoma.

TRH stimulation test

TSH 0 min	8 µIU/mL
TSH 15 min	57 µIU/mL
TSH 30 min	76 µIU/mL
TSH 45 min	75 µIU/mL
TSH 60 min	67 µIU/mL

Thyroid Function test

TSH	15.40 µIU/mL
fT3	4.78 pg/mL
fT4	1.49 ng/dL

CONCLUSION:

In clinical practice, differentiation between TSH-secreting adenomas and THR is quite difficult. Predominance of hyperthyroidism symptoms and presence of macroadenoma in hypophysis make the possibility of TSH-secreting adenoma more convincing. However, most of the patients are asymptomatic. TRH stimulation test is the most valuable test for diagnosing. Its sensitivity and specificity were reported as 90% and 80-90%, respectively. In conclusion, THR should be considered before diagnosing as TSH-secreting adenoma in patients evaluated for secondary hyperthyroidism and identified with pituitary adenoma.