Thyroid hemiagenesis associated with Graves' disease: a case report

Güven Barış Cansu[1], *Bengür Taşkıran*[1], *Tatiana Bahçeci*[2]

[1]Departmen of Internal Medicine, Division of Endocrinology and Metabolism
[2]Department of Nuclear Medicine
Yunusemre State Hospital, Eskişehir, Turkey.

OBJECTIVES

Thyroid hemiagenesis (TH) is a rare developmental disorder of thyroid. Since the majority of cases are asymptomatic, the actual incidence is unknown. Nevertheless the reported incidence in the literature varies between 0.05% and 0.07% (1,2). Although the majortiy of cases are euthyroid, TH may be associated with hyper- or hypothyrodism. Euthyroid cases can be easily missed if they are not already evaluated about thyroid pathology. Besides it is possible to misdiagnose TH with thyrotoxicosis and take wrong approach. Scintiscan of thyroid in TH with thyrotoxicosis may be confused with contralateral suppression due to autonomous solitary nodule, post inflammatory thyroid atrophy due to Hashimoto disease, focal or unilateral sub-acute thyroiditis, and primary or metastatic carcinoma (3).
In this report we present a case of TH associated with Graves' disease (GD).

CASE REPORT

A 45 year old female patient was admitted with two days of nausea and diarrhea to the endocrinology clinic. Her past medical history revealed hyperthyroidism one year ago. She denied using any iodine containing drug, radiotherapy, and thyroid surgery. She did not have any family member with thyroid disease. She was already taking propylthiouracil (PTU) 50 mg bid. Right thyroid lobe was palpable. Left side and isthmus could not be palpated. She did not show signs of Graves's ophthalmopathy. Laboratory values of patient is shown in Table. Left lobe and isthmus were invisible on thyroid ultrasonography (US). Right lobe was 44x18x12 mm in size with heterogeneous parenchyma echogenicity and nodule was not detected. Hypervascularity was present. The thyroid scintiscan with 5 mCi Technetium 99m-Pertechnetate (99mTc) revealed increased homogenous tracer uptake in the right lobe (6.7%; 0.03-3.75%). Isthmus, pyramidal lobe and left lobe were not visualized (Figure 1). The patient was diagnosed with TH and GD. The dose was then adjusted and radioactive iodine (RAI) therapy was planned.

RESULTS

	Patient	References value
Thyroid-stimulating hormone (TSH)	0.01 µU/ml	0.35-4.94
Free thyroxine (fT4)	1.80 ng/dl	0.7-1.48
Free triiodothyronine (fT3)	3.82 pg/ml	1.71-3.71
TSH receptor antibody (TRAb)	6.1 U/L	>1.5
Antithyroid peroxidase antibody (anti-TPO)	99.8 IU/ml	>5.61
Anti-thyroglobulin antibody (antiHTG)	671.7 IU/ml	>4.11

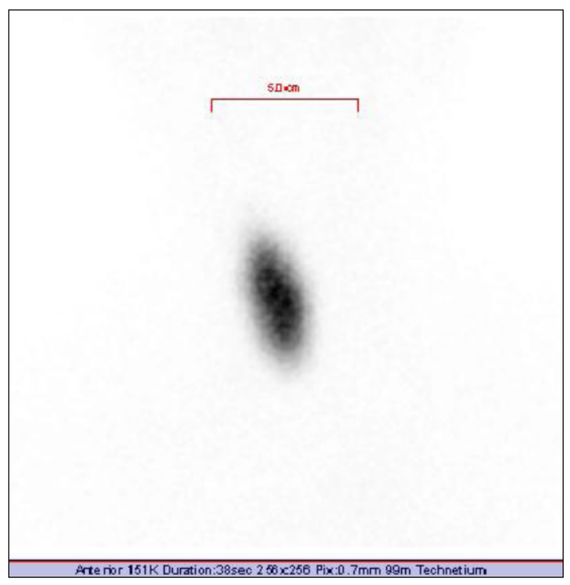

Figure 1: Thyroid scan with 99m-technetium, showed homogenous uptake of the radioisotope only in the right lobe.

CONCLUSIONS

Majority of TH cases are detected by physical examination or on imaging during work-up of thyroid disease. Asymptomatic cases are detected incidentally or in autopsy series. In 1970s TSH stimulation test was used in diagnosis of TH and T3 suppression test was used for differential diagnosis of thyrotoxicosis. Less invasive, inexpensive, and easy to perform laboratory tests (autoantibodies) and imaging modalities (US and scintiscan with Tc) replaced these tests. In addition CT, MRI, and FNAB may be helpful in the differential diagnosis. Diagnosis of GD associated TH is not challenging nowadays. But it is of utmost importance to bear this congenital anomaly in mind in order to make differential diagnosis of solitary autonomous adenoma fulfilling the lobe since treatment modalities are different.

References

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Guven Baris Cansu
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