

Multiple Endocrine Organ Failure due to Amyloidosis

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OBJECTIVES

Amyloidosis is characterized by accumulation of amorphous and protein substance in several tissues and organs. Thyroid, adrenal and pituitary insufficiencies may rarely be observed due to accumulation of these substances. Here, we present a case to point out this rare condition.

CASE REPORT

Nineteen-year-old male patient admitted with complaints of swelling in the neck, abnormality in thyroid hormone levels and fatigue. He had been diagnosed with familial mediterranean fever at the age of 5. At 13 years old, he had renal insufficiency due to amyloidosis and had undergone renal transplantation. Physical examination revealed systemic arterial blood pressure of 90/60mmHg, pulse rate of 72 beats/min. Thyroid gland was found to be diffuse palpable (Grade 2), secondary sex characteristics development was defined as stage 2-3. TSH level was increased, FT4 level was decreased, Anti-TPO and Anti-TG were negative. He had primary adrenal insufficiency and hypogonadotropic hypogonadism. ACTH and GnRH stimulation tests were in concordance with primary adrenal failure and hypogonadotropic hypogonadism. Thyroid ultrasonography revealed that right thyroid lobe was 24x23x54 mm and left thyroid lobe was 17x21x52 mm in diameters. Isthmus was 5.5 mm in diameter and there was heterogenic echogenity in thyroid parenchyma. Doppler ultrasonography revealed Grade 1-2 increased thickness in thyroid parenchyma. Thyroid fine needle aspiration biopsy revealed homogenous eosinophilic accumulation which was stained with congo red and methyl violet between thyroid follicular cells. Pituitary magnetic resonance imaging was normal. In the light of these findings the patient was diagnosed with amyloid goiter, primary adrenal insufficiency and partial pituitary insufficiency. Prednisolone 5 mg/day, levothyroxine 50 µg/day and testosterone enanthate 125 mg every three weeks were administered.

Table 1: Hormone levels of the patient

	Level	Reference Range
TSH	12.6 µIU/ml	0.51-4.3 µIU/ml
FT4	0.78 ng/dl	0.93-1.7 ng/dl
ACTH	172 ng/dl	0-46 pg/ml
Cortisole	2.89 µg/dl	6.2-19.4 µg/dl
FSH	2.7 mU/ml	3.5-12.5 mU/ml
LH	4 mIU/ml	2.4-12.6 mIU/ml
Total Testosteron	1.74 ng/ml	2.8-8 ng/ml
Free Testosteron	4.1 ng/ml	8.6-54 ng/ml

TSH: thyroid - stimulating hormone FT4: Free thyroxine ACTH: Adrenocorticotropic hormone FSH: follicle-stimulating hormone LH: Luteinizing hormone

CONCLUSIONS

Systemic amyloidosis may be accompanied with amyloid accumulation in thyroid gland as well as adrenal and pituitary insufficiencies. Thus, endocrine evaluation is necessary in these patients.

