

Muhammet Cuneyt BILGINER<sup>1</sup>, Sevgül FAKI<sup>1</sup>, Cevdet AYDIN<sup>1</sup>, Didem OZDEMİR<sup>1</sup>, Abbas Ali TAM<sup>1</sup>,  
Reyhan ERSOY<sup>1</sup>, Bekir ÇAKIR<sup>1</sup>

<sup>1</sup> Ankara Yıldırım Beyazıt University School of Medicine, Department of Endocrinology and Metabolism, Ankara, Turkey

## INTRODUCTION

➤ Brittle hypertyroidism is a term used for the clinical situation characterized by hypo-hyperthyroidism with antithyroid drugs, despite good compliance and follow-up. In this case series, we retrospectively reviewed records of four patients diagnosed with hashitoxicosis and presented the clinical evaluation of these cases.

➤ Here, we presented clinical findings of four patients interpreted as hashitoxicosis previously but suggested to have Brittle diabetes after re-evaluation of clinical records. (Laboratory and clinical findings are presented in Table 1)

**Case-1:** Thyrotoxicosis was observed in a 57-year-old female patient and Graves was diagnosed after laboratory and imaging examinations 25 months after initiation of propylthiouracil 50 mg, she developed hypothyroidism and the drug was discontinued. Thyrotoxicosis recurred in 3 months and the patient underwent thyroidectomy. The histopathological diagnosis was lymphocytic thyroiditis.

➤ **Case-2:** Graves was diagnosed in a 22-year-old female patient with Down syndrome. After 15 days of propylthiouracil treatment, serum TSH was 100 IU/mL (N: 0.4-4.0 uIU/ml) and hyper-hypothyroid periods recurred despite appropriate treatment and thyroidectomy was offered.

➤ **Case-3:** Thyrotoxicosis was observed in a 48-year-old female patient with a history of levothyroxine use for 10 years. She had positive TSH receptor antibody (TSHRAb) and ophthalmopathy. Methimazole was started because thyrotoxic state persisted despite discontinuation of levothyroxine, but hypothyroidism developed in a short time and thyroidectomy was offered.

➤ **Case-4:** A 67-year-old male patient with a diagnosis of Graves disease has used methimazol for 14 months and the drug was discontinued due to hypothyroidism. Recurrent periods of hyper-hypothyroidism developed in follow-up and BTT (bilateral total thyroidectomy) was performed.

**Table 1.** Laboratory data of the patient

	Case -1	Case-2	Case-3	Case-4	Normal range
<b>Age /Sex</b>	57/F	22/F	48/F	67/M	
<b>Ophthalmopathy</b>	Absent	Absent	Present	Present	
<b>Follow-up (Month)</b>	25	6	28	47	
<b>TSH</b>	0.02	0.008	0.009	0.005	0.4-4.0 uIU/ml
<b>Free T4</b>	1.9 (↑)	3.1 (↑)	1.24 (N)	4.18 (↑)	0.85-1.78 ng/dl
<b>Free T3</b>	5.7 (↑)	21.0 (↑)	5.97 (↑)	11.1 (↑)	1.57-4.71 pg/ml
<b>Anti- TPO</b>	441 (↑)	15.6 (↑)	600 (↑)	81.8 (↑)	Case 1-3-4 (0-35 IU/ml) Case-2 (< 5,61 IU/mL)
<b>Anti- TG</b>	2534 (↑)	42.5 (↑)	691(↑)	18.8 (N)	Case 1-3-4 (0-115 IU/mL) Case-2 (< 4,11 IU/mL)
<b>TSHRAb</b>	4.6 (N)	21.2 (↑)	405 (↑)	37.9 (↑)	Case 1 (4-9 u/l) Case 2 (0-1 u/l) Case 3-4 (0-14 u/l)
<b>Ultrasound</b>	Chronic thyroiditis	Chronic thyroiditis	Chronic thyroiditis	Chronic thyroiditis	
<b>Color -flow doppler</b>	2	3	1	3	
<b>RAIU</b>	Increased	Increased	Increased	Increased	

## CONCLUSION

➤ Hyper-hypothyroid fluctuations can be observed in patients with Graves disease.

➤ This clinical manifestation overlap with hashitoxicosis. "Brittle Graves" seems to be a better definition for such cases.