CASE REPORT

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A Celiac Disease Case with Secondary Hyperparatyroidism and Autoimmun Thyroiditis

Otoimmun Tiroidit ve Sekonder Hiperparatiroidizmle Ortaya Çıkan Bir Çölyak Hastalığı Olgusu

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ABSTRACT

Celiac disease is a chronic autoimmune intestinal absorption disorder disease progressing with gastrointestinal and extraintestinal symptoms and findings. It may be observed in association with other autoimmune diseases. Here, we present the case of a chronic Hashimoto thyroiditis patient with celiac disease as the etiologic cause of parathormone elevation.

Key Words: Celiac diseases, Autoimmune thyroiditis, Secondary hyperparathyroidism

ÖZ

Çölyak hastalığı, temelde bağırsak emilim bozukluğuyla seyreden ve ortaya çıkan kronik otoimmün bir hastalıktır. Diğer otoimmün hastalıklar ile de birliktelik gösterebilir. Bu yazıda, kronik Hashimato tiroiditli tanısıyla takipte parathormon yüksekliğinin etiyolojik nedeni olarak çölyak hastalığı saptanan bir olgu sunulmaktadır.

Anahtar Sözcükler: Çölyak hastalığı, Otoimmun tiroidit, Sekonder hiperparatiroidizm

INTRODUCTION

Celiac disease, called gluten-sensitive enteropathy and nontropical sprue, is an autoimmune disorder characterized by mucosal inflammation, villous atrophy and crypt hyperplasia in the small intestine after ingestion of gluten (1).

The disease may be asymptomatic and may present with gastrointestinal symptoms such as dyspepsia, diarrhea and constipation. Moreover extraintestinal findings (osteopenia/osteoporosis, anemia, and recurrent abortion) may accompany the clinical picture (2).

In this article, a case with celiac disease is presented as the etiologic cause of parathyroid hormone elevation in a 36-year-old female patient with a diagnosis of Hashimoto's thyroiditis.

CASE

A female patient aged thirty-six years, receiving levothyroxine replacement treatment for the diagnosis of Hashimoto thyroiditis, had complaints of indigestion, abdominal swelling and occasional knee joint pain in the last 3 months. Screening for knee pain at an external center found serum calcium 7.6 mg/dl and parathormon (PTH) 276 pg/ml and transferred the patient to our center.

Clinical examination found height 169 cm, weight 68 kg, body mass index (BMI) 24 kg/m^2, temperature 36.7 °C, pulse 86/min, arterial pressure 96/66 mmHg, respiration rate 12 breatshs per minute, conjunctiva bilateral pale, palms pale, thyroid stage 1a. Other system examinations were normal. Sinus rhythm was identified on electrocardiogram. The patient was tested to support clinical celiac disease suspicion. Laboratory tests revealed ıron deficiency anemia (Hb: 10.5 gr/dL, Hct: 33.2%, MCV: 71.7 fL,) and Vitamin D defiency. Autoantibodies to gliadin which are IgG and IgA types were positive. Thyroid hormone levels (TSH, fT4 and fT3) during LT4 replacement therapy to hypothyroidism caused by Hashimoto thyroiditis were between normal ranges. In addition, serum auto-antibodies for gliadin and endomysia were detected positively.

Serum calcium levels were lower limit of normal serum levels with higher parathormon levels than normal ranges (Table 1).

Upper gastrointestinal endoscopy was performed because of the assays that supported the clinical suspicion of Celiac disease. According to histopathological examination of the biopsy specimens taken from the duodenum during endoscopy. Chronic duodenitis characterized by near-total atrophy in villi, crypt hyperplasia and intraepithelial lymphocytosis (>30 lymphocytes / 100 epithelial cells) were demonstrated. Gluten - sensitive enteropathy was found to be consistent with the modified Marsh score 3c.

The patient was diagnosed with gluten sensitive enteropathy and given vitamin D, calcium and iron replacement. Gluten-free diet was initiated and the patient was followed up as an outpatient. Laboratory findings in outpatient follow-up a month after treatment were improved (Table 1). The patient whose clinical complaints regressed continued to be followed up with gluten-free diet.

DISCUSSION

Celiac disease is a gluten-sensitive autoimmune enteropathy and can develop at any age. Symptoms are more classical in childhood, especially in younger ages, characterized by chronic unstoppable diarrhea, growth retardation and abdominal bloating. In older ages, it may present with different findings other than the gastrointestinal tract or in mild forms (3). Recently, it has been started to be diagnosed more frequently due to improvements in serological tests and increasing clinical suspicion about the disease (4). In a study conducted in our country, the most common presenting complaints were diarrhea, weakness, nonspecific abdominal pain and weight loss; in this case; iron deficiency anemia, joint pain, bloating, hypocalcemia, secondary hyperparathyroidism were detected (5). Secondary hyperparathyroidism was considered in the patient who had no parathyroid adenoma despite of the fact that had elevated PTH concentration.

Secondary hyperparathyroidism occurs due to gastrointestinal calcium loss in celiac patients. This may lead to an increase in 25-OH vitamin D catabolism. The point to be concerned about 25-OH vitamin D levels in celiac patients is the mechanism of this catabolism as well as the defect of absorption from the gastrointestinal tract (6). Although hypocalcemia, 25-OH vitamin D deficiency and anemia are not severe celiac clinics, these findings and patient's clinical picture led us to the preliminary diagnosis of celiac disease.

In addition, the patient's previous diagnosis of Hashimato's thyroiditis has led us to consider gluten enteropathy which is an autoimmune disease and may be associated with many other autoimmune diseases

such as type 1 diabetes mellitus and autoimmune thyroiditis (7). In a study conducted by Hadithi et al. It was demonsterated the incidence of celiac disease in autoimmune thyroiditis patients increased compared to the normal population (8). The determination of celiac in a patient with autoimmune thyroiditis presented in our case supports the report from Hadithi et al.

In an other study, a prevalence of biopsy-confirmed celiac disease of 1.6% in 6024 cases with autoimmun thyroid diseases, and the prevalence was higher in children with ATD (6.2%) than in adults (2.7%). were found. In addition it was reported that celiac disease was also more prevalent in hyperthyroidism (2.6%) than in hypothyroidism (1.4%). Biopsy-verified celiac diseases were diagnosed about 1/62 cases with autoimmun thyroiditis (9). It is suggested that cases with autoimmun thyroditis should be screened for Celiac disease (9,10).

In conclusion, it is known that autoimmune thyroiditis may be accompanied by celiac disease. The celiac disease clinic may be mild in some patients and may be manifested with extraintestinal findings. For this reason, celiac disease should be kept in mind as a rare cause of secondary hyperparathyroidism due to absorption defect of calcium and 25-OH vitamin D and increased catabolism of 25-OH vitamin D. In addition, there was a significant relation between autoimmun diseases and female gender, age of diagnosis being <40 years, duration of disease, non-gastrointestinal symptoms at the time of admission.

Table 1. Patient's laboratory parameters in baseline and after treatment

Parameters	Ranges	Baseline	After Treatment
Parathormon	15-65 pg/ml	276	54.5
Calcium	8.6-10.5 mg/dL	7.6	8.9
Albumin	3.5-5.2 gr/dL	3.9	4.8
25-OH D3 Vitamin	20-100 ng/mL	11.5	74.3
Phosphorus	2.5-4.5 gr/dL	4.2	3.6
Alkalen Phosphatase	35-104 IU/L	68	34
Thyroid stimulan hormon	0.27-4.2 ng/dl	1.77	1.71
Free T4	0.93-1.7 mU/L	1.11	1.43
Free T3	2-4.4 mU/L	3.52	3.14
Anti-Tthyroid peroxydase	0-75 IU/mL	Negative	
Anti-Thyroglobulin	0-150 IU/mL	639	
Ferritin	13-150 ng/ml	3.3	74.3
Ferrum	35-145 mg/dl	40	117
Ferrum Binding Capacity	250-400 μg/dL	384	368
Transferrin saturation	25-45%	10.41	31.79
Vitamin B12	191-771 pg/mL	274	891
Folat	3.1-24.8 ng/mL	1.5	3.83
Leucocytes	3600-10200 mcL	7000	8000
Hemoglobin	12.5-16.3 gr/dL	10.5	13.5
Mean corpusculary volüme	73-96.2 fL	71.7	80.1
Platelets	152000-348000mcL	211.000	139.000
Anti Gliadin –IgG	12-18 U/mL or Negative	Positive	
Anti Gliadin – IgA	12-18 U/mL or Negative	Positive	

Etik Kurul Onayı

Olgu sunumu için hastadan bilgilendirilmiş olur alınmıştır. Deneysel ve insan örneği çalışması yapılmadığından etik olur gerekmemiştir.

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