

# Evaluation of the Thyroid Gland in Patients with Behcet's Syndrome

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Behcet's Syndrome is a chronic, progressive, recurrent syndrome that can affect all organs and that histopathologically proceeds with vasculitis. Its etiology and pathogenesis is still unknown. Since Behcet's Syndrome generally develops with vasculitis, it has a wide clinical spectrum. When the rich vascular structure of the thyroid gland is considered, the effect of Behcet's Syndrome on this gland becomes noteworthy.

This study was planned to evaluate whether thyroid gland and thyroid functions were affected in individuals with Behcet's Syndrome.

The study included 18 patients who presented at Dermatology Polyclinic of Firat University School of Medicine and who were diagnosed as Behcet's disease according to International Work Group Criteria. The control group consisted of 15 healthy individuals. FT4, FT3, TSH and thyroid antibodies were tested and thyroid ultrasonography (USG) was performed in all patients and the control group. Fine-needle aspiration biopsy (FNAB) was carried out in all Behcet's patients.

No significant difference was found between Behcet's disease patients and the control group in terms of thyroid function tests. Thyroid auto-antibodies were found negative in both groups. Thyroid USG showed that 9 patients were normal, 5 had nodular goiter and 4 had multi-nodular goiter. FNAB of the nodules revealed Hurtle-cell adenoma in one patient, while others had benign nodular goiter. It was found in the USG of the control group that 9 patients were normal, 4 had nodular goiter and 2 had multi-nodular goiter. FNAB of individuals with nodules in the control group were reported as benign nodular goiter.

It was concluded that there was no relation between Behcet's Syndrome and thyroid gland diseases in patients with Behcet's syndrome.

**Keywords:** Behcet's Syndrome, thyroid gland, goiter

## Introduction

Behçet's Disease (BD) was first described in 1937 by Prof. Dr. Hulusi BEHÇET as a triad composed of oral and genital ulceration, iridocyclitis with hypopyon (1). Today BD is recognized as a type of vasculitis that is marked by chronic inflammation and periods of wellness and that manifests itself in many different kinds and dimensions of localized

vein involvement, chronic and repetitive oral-genital ulcers and lesions where the cause is unknown and which lead to ocular inflammation (2,3). The disease is distinguished by skin, joint, neurological, gastrointestinal, pulmonary and vascular symptoms but has to this day not been identified by typical histopathological characteristics (2, 4-6).

Since BD basically progresses as vasculitis, its clinical spectrum is quite expansive (2). Considering the rich venous structure of the thyroid gland, the effect of Behcet's disease on this gland should be investigated. In our survey of the literature, we have found very few studies on this subject. Therefore, we have planned in this particular study to determine the involvement of the thyroid gland in Behçet's disease and to investigate the effects of the disease on thyroid function testing.

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## Material and Method

Eighteen patients (11 women, 7 men, average age  $32.8 \pm 11.4$  years) diagnosed with Behçet's disease as according to International Workshop Criteria who had applied to the Firat University Medical School (FUMS) Dermatology Polyclinic during the period January 2002-March 2004 were accepted into the study. All of the patients were in remission and had previously received no treatment. The patients were given information as to what was to be done and their written consents were obtained. The control group consisted of 15 healthy (9 women, 6 men, average age  $29.1 \pm 5.8$  years) individuals.

All of the patients and the control group were tested for FT4, FT3, TSH thyroid autoantibodies. All of the patients and the control group were administered a thyroid USG. An FNAB was conducted on all of the patients with Behçet's disease as well as on those of the control group with nodules. The thyroid function tests were measured using one of the luminescence immunoassay methods known as the electrochemiluminescence immunoassay (ECLIA) method. For measurements of sT3, sT4 and TSH, Elecsys FT3 reagent kit-11731386, Elecsys FT4 reagent kit-11731297, Elecsys TSH reagent kit-11731459, and Roche's Elecsys 1010/1010 kit were used respectively. A Roche modular analytics E170 (Elecsys module) immunoassay analyzer that is compatible with these kits was used for the thyroid function tests. Serum levels of anti-TG and anti-M were measured with ELISA kits (Trinity Biotech Plc, Co Wicklow, Ireland.) by using full automatic Triturus (Grifols Diagnostic, Barcelona, Spain) micro ELISA device.

## Results

No significant difference was determined between the thyroid function tests of the Behçet's disease patients and the control group. Average values in both groups were within normal boundaries. Thyroid antibodies tested negative in both groups (Table 1).

**Table 1.** Thyroid hormone levels DB and controls.

	Behçet's Disease	Controls	p
TSH ( $\mu$ IU/ml)	$1.31 \pm 0.84$	$1.42 \pm 0.76$	NS
FT4 ng/dl)	$1.31 \pm 0.17$	$1.20 \pm 0.60$	NS
FT3 (pg/ml)	$3.03 \pm 0.67$	$2.74 \pm 0.55$	NS
Autoantibody positivity (n)	None	None	NS

While the Thyroid USG in 9 BD patients were found to be normal, nodular goiters were found in 4 patients and multinodular goiters in another 4. In the FNAB conducted on the nodules, one patient was seen to have Hurtle-cell adenoma while the others were reported as having benign nodular goiters.

In the USG administered to the control group, 9 patients were normal, 4 had nodular goiters and 2 were found to have multinodular goiters (Table 2). The FNAB conducted on the individuals in the control group with nodules revealed benign nodular goiters.

**Table 2.** Thyroid USG in BD patients and control group.

	Behçet's Disease	Controls	p
Nodular goiter (n)	4	4	NS
Multinodular goiter (n)	4	2	NS
Normal (n)	9	9	NS

## Discussion

The etiopathogenesis of BD is not fully known. The prevalent view today is a multifaceted perspective. Infectious agents such as viruses and particularly the Herpes simplex virus and some streptococci have been blamed and some toxins, chemical substances and environmental factors that lead to disruptions of the regulation of the immune system are thought to play a role in the etiopathogeny (4, 7).

BD is a relapsing, inflammatory, systemic vasculitis with an underlying etiologic autoimmune basis. The inflammation that triggers off immunity mechanisms is responsible for the disease's symptoms and findings. Many different phenotypical and functional disturbances have been identified up until now in cellular and humoral immunity in Behçet's disease. Disturbances in the T-cells and in the neutrophilia constitute an important part of these findings (4,7). As autoimmunity is blamed in the etiology of BD, the possibility of increased incidence of thyroid gland abnormalities should be considered.

We found that there are very few studies researching the thyroid functions of patients with BD. A study conducted to evaluate endocrine-logical functions through the testing of hormone levels has reported no abnormality (8).

K. Aksu et al (8) have reported that thyroid functions in Behçet's disease patients were no different than those of the control group. While 5 Behçet's disease patients in this study tested positive to thyroid autoantibodies, this positive finding was not seen in the control group. Three of the Behçet's disease patients were found to have nodular goiters while two were diagnosed with diffused goiter. The research reported that the incidence of goiter in the region of study was 49% and that there was no significant difference in this in the group of patients with BD.

In our study, we found thyroid functions to be normal in both the control group and in the group of Behçet's disease patients. Both groups tested negative in autoantibodies. We found a high percentage of nodular goiter in the USG's of both the Behçet's disease and the control groups. It may be possible to assess this as a condition due to the iodine deficiency in the region of the study (9).

Neurologic involvement in BD was first reported in 1941 by Knapp (10), and the term neuro-Behçet syndrome was introduced by Cavara and D'Ermo in 1954 (11). The reported rate of development of neurologic involvement among BD patients ranges from 4% to 49% (12-15). Neurological involvement most commonly is reported to manifest as brainstem or corticospinal tract syndromes, increased intracranial pressure mostly related to venous sinus thrombosis or aseptic meningitis, isolated behavioral symptoms, or isolated headache (13, 16-20). Rare presentations include intracerebral hemorrhage due to ruptured aneurysms, peripheral neuropathy, isolated optic neuritis, and a parkinsonian syndrome (21-23). We did not find any literature that whether BD cause secondary hypothyroidism via affecting hypophysis or hypothalamus. Also, there was no any finding that make us think secondary hypothyroidism signs in our patients groups

In conclusion, our observation in the study has been that there is no relation between Behçet's disease and thyroid disorder.

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