Thyroid-associated orbitopathy in patients with Hashimoto’s thyroiditis: a case report

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Abstract: Thyroid-associated orbitopathy is a set of ophthalmic symptoms resulting from an autoimmune process in which the swelling of extraocular tissues leads to exophthalmos either caused by hypersecretion and accumulation of glycosaminoglycans in the orbit fibroblasts or being the result of inflammatory processes in the oculomotor. These changes cause eyeball motility disturbances, keratopathy, and the pressure on the optic nerve. Thyroid-associated orbitopathy accompanies Graves’ disease in most cases, whereas the Hashimoto’s disease in only 5%. In the present case, other reasons for the exophthalmos such as tumors of the orbit and sinuses, intracranial tumors, aneurysms and vascular fistulas and orbit tissue inflammation of different etiology were excluded. Additional examinations showed that thyrotropin level was 26 µU/ml (normal range 0.27–4.0), antithyroglobulin antibody level was 1763 IU/ml (normal range 0–115), antithyrotropin antibody level was 4.93 IU/l (normal range 0–1), and anti-thyroid peroxidase antibody level was 1609 IU/ml (normal range 0–35).

An ultrasound examination showed a thyroid gland of 9.8 ml volume. A cytological presentation obtained by thin-needle aspiration biopsy demonstrated inflammatory infiltration of lymphocytes, indicating an autoimmune process. The iodine uptake after 24 hours was 9%. The active form of orbitopathy was diagnosed in the patient with hypothyreosis in the course of Hashimoto’s disease. Moreover, the coexistence of another autoimmune disease, pernicious anemia was diagnosed. The administration of the methylprednisolone pulse therapy and levothyroxine caused remission of ophthalmic symptoms, and euthyreosis was obtained. Our report presents a rare coexistence of thyroid orbitopathy and Hashimoto’s disease.

Key words: autoimmune disease, Hashimoto's disease, orbitopathy, thyroid antibodies

INTRODUCTION

Thyroid-associated orbitopathy (TAO) is a set of symptoms caused by an autoimmune process and related to ophthalmic tissues. Ocular lesions in autoimmune thyroid diseases occur five times more often in women than in men (respectively, 16 and 2.9 cases per 100 000 annually). Their course and prognosis is so far worse in men [1]. Orbitopathy may occur simultaneously with the manifestation of hyperthyreosis or later (about 70%), before the manifestation of hypothyreosis (about 25%), in euthyreosis (<5%) and hypothyreosis (3–5%) [2]. In the pathogenesis of TAO, a significant role is assigned to the mutual antigen, which may be the thyroid stimulating hormone (TSH) receptor, located on thyroid cells, orbit muscles and fibroblasts. Antithyrotropin (anti-TSH) antibodies and auto-reactive T-cell clones may trigger an inflammatory process in the orbit tissues. As a result, leukocytes secrete cytokines [3]. These substances stimulate fibroblasts to secrete and accumulate glycosaminoglycans, resulting in the swelling of extraocular tissues. The clinical manifestations of the described processes are exophthalmos, soft tissue swelling, eyeball motility disturbances, keratopathy and neuropathy of the optic nerve [4,5].

CASE REPORT

A patient, a 36-year-old, long-term smoker, was admitted to the hospital for a several-month history of eyeball pain, lacrimation, blurred and double vision. In the previous weeks, exophthalmos occurred. Symptoms of hyperthyreosis could not be traced back in the anamnesis, and on admittance, the patient did not show the symptoms typical for hypothyreosis. His physical examination showed flushing and swelling of the eyelids and lacrimal caruncle, conjunctival injection, and congestion of the palpebral conjunctiva. An ophthalmological examination showed a mild abduction deficiency. The degree of
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sue inflammation of different etiology were also considered [12]. Typical MR abnormalities and the presence of antibodies against thyroid antigens settled the dilemma in favor of TAO diagnosis.

High anti-Tg and anti-TPO levels could indicate GD or HD. Increased TSH level, small thyroid volume of heterogeneous decreased echogenicity with low iodine uptake and the thin-needle biopsy result supported the diagnosis of HD.

Glucocorticoids and levothyroxine treatment resulted in a significant improvement of the clinical state. Smoking has been proven to worsen the course and prognosis of orbitopathy [5]. In this patient, smoking could have been one of the factors conducive to the manifestation of TAO. Hashimoto’s disease may represent a component of the polyglandular autoimmune hypofunction syndrome. Therefore, in such patients, other autoimmune diseases should be expected such as pernicious anemia, adrenocortical insufficiency, hypoparathyroidism, type 1 diabetes, myasthenia gravis, hepatitis or albinism [13]. The patient has been diagnosed only with pernicious anemia. The presented case shows the rare coexistence of Hashimoto’s disease and thyroid-associated orbitopathy in male patients.

REFERENCES