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(CASE REPORT)

Hypothyroidism and myasthenia gravis: A rare association

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Abstract

The prevalence of endocrinopathies during myasthenia is relatively common. The association of myasthenia with dysthyroidism can make the diagnosis of these two conditions difficult, because of the similarity of some clinical signs. Several disorders of specifically thyroid immunologic origin have been reported in myasthenic patients. This relationship remains poorly elucidated, but an immunologic cross-reaction between the neuromuscular junction and thyroid components has been found in myasthenia and Graves' disease. It is generally accepted that the association between hyperthyroidism and myasthenia is much more frequent than that between myasthenia and hypothyroidism. However, no clear explanation has been proposed for this difference. We report the case of a 28-year-old patient who was initially followed for myasthenia under anticholinesterase therapy and whose evolution was marked by the discovery of hypothyroidism during follow-up. The patient responded well to replacement therapy with a good evolution.

Keywords: Hypothyroidism; Myasthenia; Dysthyroidism; Autoimmunity

1. Introduction

Myasthenia "myasthenia gravis", is a rare autoimmune disease due to specific autoantibodies that induce a dysfunction of neuromuscular transmission, the consequence of which is an excessive fatigability of the striated musculature during exercise [1]. It is more frequent in women than in men. Its diagnosis may remain unrecognized for a long time. It may be associated with other autoimmune conditions such as dysthyroidism in particular autoimmune. Myasthenia patients may develop thyroid disorders of autoimmune origin before the discovery of myasthenia, concomitantly or occurring after. A search for thyroid disorders of autoimmune origin should be advocated during the surveillance of myasthenic patients. We report the case of a patient who was followed for myasthenia and developed hypothyroidism during follow-up. [2].

2. Observation

A 28-year-old female patient who had been followed up for myasthenia for 2 years was found to have muscle weakness aggravated by physical effort, confirmed by an anti-acetylcholine receptor autoantibody (AChRAb) assay (R. I.A) was positive: 87.4nmol/L (< 0.2), the electromyogram (EMG) showed a post-synaptic neuromuscular junction impairment and the patient was put on anticholinesterase treatment (Mestenon 60mg/day).

The patient was referred to our training for suspected hypothyroidism due to worsening asthenia with intermittent dysphagia and chronic constipation. On clinical examination a homogeneous goiter grade WHO 2 with slight depilation of the tail of the eyebrows was observed, the thyroid workup showed a picture of profound peripheral hypothyroidism:

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thyroid stimulating hormone (TSH): 119.12 µUI/ml (0.35- 5), T4L: 3.21 pmol/l (12-22), anti-thyroperoxidase antibodies very positive to normal confirming the autoimmune origin. Thyroid ultrasound noted a large goiter. A cardiovascular evaluation done was normal. The patient waś put on levothyroxine-based replacement therapy at a dose of 75ug/day with good biological evolution of her TSH.

3. Discussion

Myasthenia gravis is a rare condition of autoimmune origin. Its diagnosis is not easy and it may remain unrecognized for a long time [3]. It is due to specific autoantibodies responsible for a dysfunction of neuromuscular transmission inducing muscle fatigabilitý. It can be associated with many diseases, foremost among them dysthyroidism [4]. Sahay et al reported a series of 260 myasthenic patients, of whom 8 patients had associated thyroid disease (5 patients had hypothyroidism and 3 had hyperthyroidism) [5]. Other authors reporteḋ a series of 58 patients with myasthenia, 4 patients had thyroid disorders, 3 had hypothyroidism, and one has hyperthyroidism [6]. The association of myasthenia with hypothyroidism can make the diagnosis of these two pathologies difficult, because of the similaritý of some clinical signs especially in the case of subclinical hypothyroidism. No treatment provides a permanent cure for myasthenia. Many medications are used to reduce symptoms and prevent complications. Most of the time, treatment allows the patient to lead a normal life. With management, mortality from the disease has decreaseḋ dramatically and has become exceptional in recent years [7]. Our patient's workup objectified hypothyroidism on probable Hashimoto's thyroiditis. Our patient had a very positive anti-thyroperoxidase antibody level compared to normal and the thyroid ultrasound showed a large homogeneous goiter. Hashimoto's thyroiditis can present in different forms, the two main ones being the goitreous form and the atrophic form. The paraclinical diagnosis of myasthenia is based on the determination of specific autoantibodies (anti-acetylcholine receptor antibodies, anti-MuSK antibodies), electromyography and therapeutic testing with anticholinesterase drugs. Anti-acetylcholine receptor antibodies are positive in 85% of cases of generalized myasthenia and 66% of cases of ocular myasthenia [8]. The antibody assay in our patient was positive and the electromyogram objectified post synaptic neuromuscular junction involvement. The patient waś put on levothyroxine-based replacement therapy at a dose of 75ug/day with good biological evolution of her TSH. Surgical management may be considered in view of the compressive signs.

4. Conclusion

Our study demonstrates that myasthenic patients can develop thyreopathies of autoimmune origin before the discovery of myasthenia. Monitoring of myasthenic patients for signs of hypothyroidism and myasthenic manifestations in patients with hypothyroidism is indicated.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflict of interests.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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