

MYASTHENIA GRAVIS – PROBLEMS IN DIAGNOSIS. A CASE PRESENTATION

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ABSTRACT

The possibility of myasthenia gravis must be considered in patients persistently complaining of weakness and fatigue. There may be many difficulties and pitfalls in differentiating myasthenia gravis from other disorders in which muscular weakness is a common complaint.

Myasthenia gravis is an autoimmune disease caused by a defect of neuromuscular transmission due to antibody-mediated attack. Dysphagia and dysarthria are two of the common symptoms and are due to oropharyngeal muscles involvement. They can be the first symptoms of the disease and sometimes can be mistaken for manifestations of emotional problems, usually anxiety or depression. The disease may be underappreciated as a cause of bulbar weakness. If clinical findings and history are highly suggestive, complementary tests should be performed (and sometimes maybe repeated) in order to confirm the diagnosis before psychasthenia or another psychiatric diagnosis is considered.

We report the case of a 42-year-old woman who was admitted in our clinic for swallowing difficulties leading at the end of the day to total dysphagia, dysarthria, fluctuating limb muscle weakness and bilateral eyelids ptosis with incomplete occlusion.

Key words: myasthenia gravis, differential diagnosis, dysphagia, dysarthria

INTRODUCTION

Myasthenia gravis is an autoimmune disease caused by a defect of neuromuscular transmission due to antibody-mediated attack on nicotinic acetylcholine receptors or muscle-specific tyrosine kinase (MuSK) receptors at the postsynaptic neuromuscular junction. It is characterized by fluctuating muscle weakness and fatigability. Myasthenia is improved by acetylcholinesterase inhibitors or immunosuppressants and in selected cases thymectomy can be performed. Dysphagia and dysarthria are two of the common symptoms and are due to oropharyngeal muscles involvement. They can be the first symptoms of the disease and sometimes can be misdiagnosed as emotional problems, usually depression.

CASE PRESENTATION

We report the case of a 42-year-old woman who was admitted in our clinic for swallowing difficulties leading at the end of the day to total dysphagia, dysarthria, fluctuating limb muscle weakness and bilateral eyelids ptosis with incomplete occlusion; the symptoms decreased with rest and sleep.

She had no personal history of illnesses, no family history of neurological diseases, no known allergies; she was non-smoker and denied alcohol consumption.

The symptoms started about one year ago when she experienced:

- episodes of swallowing difficulties with a fluctuating character which worsened along the day making it difficult for the patient to eat (5 kilos weight loss).

- altered speaking (dysathria) which worsened during speech
- chewing problems (she could not eat consistent food, such as an apple)
- limited facial expressions after a few weeks (bilateral eyelids ptosis).

She was admitted to a hospital and an ear, nose and throat examination was performed which showed no pathological findings, so she was diagnosed with depression and various antidepressant treatments were attempted with no improvement. After about six months, she noticed fluctuating muscle weakness in the limbs during the day and especially generated by physical effort and also aggravation of the other mentioned symptoms. She was referred to another hospital, repetitive nerve stimulation and single-fiber EMG were performed but showed no decrement and the jitter was not increased; the diagnosis was once again depression. After two other months with no symptoms improvement she stopped antidepressant by herself antidepressant treatments.

On current presentation in our clinic the general examination was without clinical significance: the patient had stable vital signs, no fever.

The neurological examination showed an alert patient, oriented in space and time, with asymmetrical bilateral eyelid ptosis, unequal palpebral fissures with incomplete occlusion, limitation of facial movements, dysphagia, muscle weakness increased after repeated movements, fatigability after small efforts, dysarthria (nasal speech).

Taking into account the medical history and the clinical examination of the patient we considered myasthenia gravis to be the most probable diagnosis.

We first performed a neostigmine test with dramatic improvement of the symptoms after the injection: the patient was able to close the eyelids, had almost no swallowing difficulty and facial mimic was present.

The laboratory evaluation of our patient showed increased levels of AChR antibodies with no other changes (including thyroid hormones and antibodies, blood glucose, antinuclear factor, rheumatoid factor).

A brain MRI was performed but showed no abnormalities.

The chest computed tomography showed a normal thymic lobe.

The pulmonary function tests were also normal.

After the medical history, the clinical examination and the paraclinical findings we considered the diagnosis of myasthenia gravis class II b.

We started the treatment with pyridostigmine 180 mg/day and prednisone 30 mg/day with favorable evolution and the patient was discharged after 2 weeks.

A good response to medication can also be considered a sign of autoimmune pathology.

Now the patient is on pyridostigmine 240 mg/day with favorable evolution (the dose of prednisone was progressively decreased and then stopped).

DISCUSSION

Myasthenia gravis is not a rare condition. Although the hallmark of myasthenia gravis is fatigability, muscles that control eye- and eyelid movements, facial expression, chewing, talking, and swallowing are especially susceptible. Often, the physical examination yields results within normal limits.

Acetylcholinesterase inhibitors can improve muscle function by slowing the natural enzyme cholinesterase that degrades acetylcholine in the motor end plate; the neurotransmitter is therefore around longer to stimulate its receptor.

A special blood test can detect the presence of immune molecules or acetylcholine receptor antibodies. Most patients with myasthenia gravis have abnormally elevated levels of these antibodies.

The diagnosis is based on medical history and clinical findings, positive symptom response to neostigmine injection (false positive responses have been found with structural lesions such as brain stem tumors), finding of high titers of AChR antibodies or autoantibodies against the MuSK protein (but a normal titer does not exclude the diagnosis), responses to repetitive stimulation and single-fiber EMG; sometimes a thymoma can be present.

However, neither of these antibodies is present in some individuals with myasthenia gravis, most often in those with ocular forms of myasthenia gravis.

In our case, the patient had at the beginning only swallowing difficulties and because only an EMG examination was performed she was easily misdiagnosed as depression.

Because repetitive nerve stimulation and single-fiber EMG were normal 6 months from the start of the neurological symptoms no further investigations were conducted even though the history and clinical findings were suggestive for a myasthenic syndrome.

Because weakness is a common symptom of many other disorders, the diagnosis of myasthenia gravis is often missed or delayed (like in our case)

in people who experience mild weakness or in those individuals with weakness restricted to only a few muscles.

CONCLUSION

The first steps of diagnosing myasthenia gravis include a review of the patient's medical history, and physical and neurological examinations. The physician looks for impairment of eye movements or muscle weakness without any other changes. If myasthenia gravis is suspected, several tests are available to confirm the diagnosis.

Myasthenia gravis can manifest with dysphagia and dysarthria and the diagnosis needs to be considered in cases of unexplained swallowing and speech difficulties. The disease may be misdiag-

nosed as a cause of bulbar weakness. If clinical findings and history are highly suggestive, complementary tests should be performed (and sometimes maybe repeated) in order to confirm the diagnosis before psychasthenia or another psychiatric diagnosis is considered.

With specific treatment, most myasthenic patients can significantly improve their muscle weakness and live normal or nearly normal lives. Some cases of myasthenia gravis may go into remission – either temporarily or permanently – and muscle weakness may disappear completely so that medications can be discontinued.

There is no known cure for myasthenia gravis. However, treatment may allow patients to have prolonged periods without any symptoms (remission), and this was our patient's case.

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