ORIGINAL RESEARCH PAPER
Volume - 15 | Issue - 01 | January - 2026 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE OF SERO NEGATIVE OCULAR MYASTHENIA GRAVIS

General Medicine

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ABSTRACT

Patients diagnosed with Myasthenia Gravis have Acetylcholine Receptor (AChR) antibodies or Muscle specific receptor (MuSK) antibodies in their blood. In the absence of these antibodies in the blood, the patients can still have Myasthenia Gravis if they meet the diagnostic criteria. Here we present a case report of a patient who presented with predominantly ocular weakness which was variable and occurred with fatigue. The antibody tests for Myasthenia Gravis were negative. The patient responded to the conventional treatment for Myasthenia Gravis.

KEYWORDS

INTRODUCTION

Myasthenia Gravis is diagnosed by the presence of the characteristic signs and symptoms and the presence of the AChR antibodies and MuSK antibodies in the patients. In the absence of these antibodies, patients can still have Myasthenia Gravis (MG) if they meet the diagnostic criteria. These are called Seronegative Myasthenia Gravis (SNMG) which comprise of about 10% of the Myasthenia Gravis patients. The diagnosis is based on the clinical presentation which includes thorough history, examination, electrodiagnostic findings and the response to treatment. It is considered to be a rare disease.

It has been postulated that even though the antibodies are absent, there might be the presence of different antibodies which have not yet been discovered yet. Anew antibody found is LRP4. Also a cell based assay is becoming commercially available. 18.2% of patients who were seronegative tested positive for Myasthenia Gravis by these methods.[1]

Symptoms of Seronegative Myasthenia Gravis are similar to antibody positive Myasthenia Gravis. It can be ocular or generalized with symptoms ranging from mild to severe. It affects the voluntary muscles of the body. The symptoms come and go depending upon the level of muscle fatigue. The weakness worsens with repetitive activity.

Common symptoms include- Ptosis, Blurred and double vision, Facial muscle weakness, Difficulty in talking, Difficulty in chewing and swallowing, Difficulty in breathing, Weakness in neck and limbs. The symptoms are made worse by- Infections, Poor sleep, Extremes of temperature, Increased activity, Repetitive muscle activity, Menstruation, Stress, Hypokalemia, Thyroid dysfunction.[2]

CASE REPORT

A 40 years old male patient came to the General Medicine OPD with complaints of – Drooping of the upper eyelids for the past 1 month. The patient was alright one month back when he started experiencing drooping of the eyelids. The drooping of the eyelids occurred towards the evenings when the patient had been going about his routine work. He usually did not take a nap in the afternoon. The drooping of the eyelids gradually worsened in the evenings and was relieved after taking some rest and closing the eyes for some time. This had been gradually increasing in severity in the previous one month such that the drooping of the eyelids were subsequently occurring earlier in the day. The patient became gradually more incapacitated by the disability and had difficulty in going about his routine activities.

There was no history of seizures,
There was no history of bladder/bowel disturbances,
There was no history of sensory symptoms,
There was no history of trauma,
There was no history of fever/cough/dyspnoea,

There was no past history of Tuberculosis, Diabetes Mellitus or any tumour.

There was no family history of any similar complaints.
The patient was a chronic alcoholic and was not a smoker.

On General Physical Examination, the patient was conscious, cooperative, and well oriented to time, place and person. The BMI was 24. The patient was afebrile, had a pulse rate of 80 beats/min, regular, normal volume, no radio-femoral delay, all peripheral pulses were well felt, normal character and the condition of the vessel wall was normal. The blood pressure was 160/100 mmHg. The respiratory rate was 16/min. There was no pallor, icterus, clubbing, cyanosis, lymphadenopathy or edema. The JVP was not raised.

On systemic examination, the examination of the CNS showed that there was drooping of the eyelids. There was no other preferential weakness. The fundus was normal. The reflexes were normal. The plantars were bilateral flexor. Other systems examination were normal. On the basis of the examination findings, the differential diagnosis was kept as-

Myasthenia Gravis
Lambert Eaton Myasthenic syndrome
Graves ophthalmopathy
Chronic progressive external ophthalmoplegia
Oculopharyngeal dystrophy
Horners syndrome
Botulism

On investigation, the routine investigations were normal. The Antiacetylcholinesterase antibody were negative. The MuSK antibody was negative. The chest X-ray and ECG were normal. The CT thorax done to rule out thymoma was also normal. The ultrasound of abdomen of the patient showed fatty liver. The PT(INR) was normal. The patient was started on Tab Pyridostigmine 60 mg TDS, Tab Prednisolone 40 mg OD. The patient showed improvement in the coming days and the drooping of the eyelids improved. So, the final diagnosis was kept as Seronegative Ocular Myasthenia Gravis.

DISCUSSION

Diagnosis of SNMG requires testing for all the conventional antibodies seen in Myasthenia Gravis. Cell based assay can be done. Other tests that can be done to rule out the other diseases include- MRI of brain and spine, lumbar puncture, muscle biopsy and other tests. Neurological examination for upward and lateral gaze to evaluate for ptosis and double vision, limb strength testing against resistance, repetitive muscle testing, neck flexion and extension against resistance, evaluating speech for nasality and slurring. The electrdiagnostic tests that can be used include- Repetitive nerve stimulation (RNS), Single fiber EMG (SFEMG).

Ice-pack test involves measuring the eye opening, placing the ice pack over the eyes for 2-5 min, then remeasuring the eyelid opening. Ice pack test is positive if there is an improvement of ptosis of 2mm or more.

Edrophonium (Tensilon) test- It involves giving the patient an intravenous injection of short acting cholinesterase inhibitor and evaluating for the response and seeing for improvement in muscle weakness.

CT Scan of the chest to look for Thymoma can be done.

Differential diagnosis includes- Stroke, Multiple sclerosis, Lambert-Eaton myasthenic syndrome, Congenital myasthenic syndrome, and Amyotrophic lateral sclerosis. The patients can be assessed by medical history, physical and neurological examination to evaluate the clinical signs. The weakness in Myasthenia Gravis is variable and worsens with muscle use and improves with rest.

The drugs and the treatment modalities used to treat Myasthenia Gravis include-
Pyridostigmine - Acetyhlcholinesterase inhibitor
Corticosteroids - Prednisolone
IVIg
Plasmapheresis

Immunosuppressant therapy - Azathioprine, Mycophenolate mofetil, Methotrexate, Tacrolimus, Rituximab, Eculizumab.[3]

CONCLUSION

The seronegative ocular myasthenia gravis is a rare disease and requires a high index of suspicion for it's diagnosis. The presentation in the patient with a classical signs and symptoms of Myasthenia gravis and negative antibody panel seen in Myasthenia gravis and further response to the treatment given for the Myasthenia gravis confirms the diagnosis of seronegative ocular myasthenia gravis.

Funding: No funding sources
Conflict of interest: None declared
Ethical Approval: Not required

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