Myasthenia Gravis in a Patient with HIV

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Abstract

A 25 year old female presented with facial weakness and symmetrical proximal weakness of the extremities which was aggravated on exertion. Clinical examination and laboratory investigations were diagnostic of myasthenia gravis. Moreover, the patient tested positive for HIV. Management with anticholinesterase medication showed marked improvement in overall strength and performance of activities of daily living (ADL). The possibility of simultaneous affection with myasthenia gravis should be borne in mind when HIV patients present with weakness.

Key Words: HIV, Myasthenia Gravis.

Introduction

Myasthenia gravis is a disorder of neuromuscular junction, where, as a result of antibody mediated depletion of acetylcholine receptors, there is weakness of the face and extremities. Though muscle weakness is common in HIV patients due to various causes, association with myasthenia gravis is rare with only a few cases reported so far in the literature. This report documents a patient who was affected with both.

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Case Report

A 25 year old unmarried female from a hill district of Manipur, working in a metropolis, reported to the OPD of the Department of Physical Medicine and Rehabilitation, RIMS, Imphal, with complaints of generalized weakness especially affecting all extremities for the last one year.

Her presenting symptoms started one year back when she had episodes of weakness of her extremities which was usually felt more during the daytime. She was easily fatigued on exertion. Her weakness gradually increased and involved the face with complaints of double vision and tiredness while chewing food.

She had no relevant past medical, surgical or family history.

Examination of the patient showed bilateral ptosis, diplopia, slurred speech, normal muscle bulk and tone, symmetrical proximal weakness of the extremities (MRC 2-3/5) with other neurologic symptoms preserved. Forward Arm Abduction Time test was only 3 seconds. Most of the ADL were affected.

Investigations showed normal CBC, urine RE, blood sugar, ECG, LFT, KFT, serum electrolytes, CPK, thyroid profile, ANA, Rheumatoid Factor, CXR, USG abdomen and CECT thorax. Her HCV Ab and HBs Ag were also negative. EMG (Repetitive nerve stimulation) however showed decremental response. NCV was normal. Acetylcholine Receptor Autoantibody assay showed a high titre (31.45 nmol/L. Positive = > 0.40 nmol/L). Test with Neostigmine 1.5 mg/ml i.m showed marked improvement of symptoms within 15 minutes.

Moreover, based on her possible risk behavior, we assessed her retrovirus status after pre-test counseling, which was found to be positive for HIV and the CD4 count was 248/cumm. The patient admitted to having sexual contact 3 years back.

Initially, the patient was started on Tab. Neostigmine 15 mg orally five times daily. There was improvement in overall weakness. The patient was able to perform her ADLs independently and had no difficulty in chewing food. She no longer had symptoms of diplopia. Her Forward Arm Abduction Time test also increased to 40 seconds to 2.4 mts in subsequent follow up assessments.

After post-test counseling, she was also put on anti-retroviral therapy by the ART centre, RIMS.

The present status of the patient is stable with 4 hourly doses of Tab. Neostigmine 15 mg and Anti-retroviral therapy.

Discussion

Myasthenia Gravis is a neuromuscular disorder characterized by weakness and fatigability of skeletal muscle. It results from a decrease in the number of available acetylcholine receptors at the neuromuscular junction due to an antibody mediated attack. It is prevalent in 1: 7500 population. It usually affects women in their 20s and 30s and men in their 50s and 60s with a woman preponderance[1,2] . The patient who was under our care was a female and her age fell in the common age group.

The main features are weakness and fatigability of muscles on exertion and improves following rest or sleep. Muscles affected are cranial muscles like the lids and extraocular muscles resulting in diplopia and ptosis, mastication muscles resulting in chewing difficulties, slurred speech due to tongue weakness, muscles of extremities especially proximal muscles. Other neurologic functions are preserved[1,2]. This same clinical picture was also observed in our patient.

Diagnostic tests involves baseline investigations, ruling out thyroid disease, myopathies, periodic paralysis, SLE and presence of thymoma through CECT thorax. Tensilon test or Neostigmine test is highly predictive while EMG (repetitive nerve stimulation) showing decremental response is confirmatory. Acetylcholine receptor autoantibody assay is 90 % positive [1-3]. Most of the clinical and laboratory tests were suggestive of myasthenia gravis in our patient and she was responding well with anticholinesterase medication.

Muscle involvement in HIV infected patients is not uncommon in the form of myopathies (Disease related or drug related like Zidovudine)[4]. However, occurrence of myasthenia gravis in HIV patients is rare [5]. There are few case reports of association of myasthenia gravis with HIV in the literature till date [5-8].

The association of myasthenia gravis and HIV infection may be by chance or maybe due to involvement of the thymus gland. It is theorized that the thymic epithelial atrophy and decrease in thymopoiesis that occurs in myasthenia gravis and HIV-1 infection may in part derive from cytokines or other factors produced by peripheral immune cells within the thymic perivascular space. These two disorders share similar histology and their coexistence may suggest an unknown immunopathogenetic mechanism which comes into play in some cases of HIV infection leading to the development of myasthenia gravis[9,10].

HIV infected patients presenting with muscle weakness should also be investigated for possible simultaneous affection of myasthenia gravis.

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