Non-ptotic Oculer Myasthenia Gravis Presenting with Vertical Diplopia: Case Report

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ÖZET

Vertikal diplopi ile prezente olan nonptotik oküler myasteni gravis: Olgu sunumu

Myasteni gravis iskelet kaslarında nöromuskuler bileşkedeki disfonksiyon sonucu güç kaybıyla karakterize, otoimmun komponenti de olan bir hastalıktır. Sıklıkla adolesan ve genç erişkinlik döneminde başlar. Myasteni gravis okulomotor kasları tutarsa oküler myasteni olarak adlandırılır. Myasteni gravis hastalarının yaklaşık yarısında okuler semptom ve bulgular mevcutken, %15'i sadece oküler myasteni kliniği ile seyrederler. Ptozis, diplopi ve orbikularis okuli kasında zayıflık klasik triadını oluşturur. Olguların %90'ında ptozis eşlik etmekte olup, nadiren sadece ptozisle uzun dönem seyreder. Oküler Myasteni gravis (OMG)'lilerin 2/3'ü jeneralize myasteniye dönüşürken, 1/3'ü oküler myasteni olarak kalır. Vertikal diplopi ile kliniğimize başvuran nonptotik 67 yaşında bir oküler myasteni olgusu sunduk.

Anahtar kelimeler: Vertikal diplopi, Oküler myasteni gravis, pitozis

ABSTRACT

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Myasthenia Gravis is an autoimmune disease characterized by muscle strength loss due to dysfunction at the neuromuscular junction. The disease process most often begins at the adolescence and early adulthood. If the disease involves only ocular muscles, the term ocular myasthenia is used. While ocular symptom and signs are present in up to half of the myasthenia gravis patients, only 15% of the patients' prognosis is dominated by sole ocular symptoms. The classic triad of the disease includes ptosis, diplopia and weakness of the ocular muscles. Ptosis accompanies the clinical picture in 90% of the cases but only rarely does the disease stay with ptosis as the only clinical symptom. Two- thirds of the ocular myasthenia gravis cases transform into generalized myasthenia and one-third remain as ocular myasthenia. We present a 67 year-old patient who applied to our clinic with the chief complaint of vertical diplopia

Key words: Diplopia, ptosis, vertical diplopia and ocular myastenia

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INTRODUCTION

Myasthenia Gravis is a disease characterized by dysfunction in the neuromuscular junction. Ocular myasthenia gravis (OMG) is a subtype limited to only ocular muscle involvement. The classic triad of eyelid ptosis, ophtalmopharesis and orbicularis oculi weakness usually establishes the diagnosis. Most of the patients describe increasing symptoms towards the end of the day or by driving. Fatigue in the levator palpebralis during up gaze for one to two minutes and related increase in ptosis can be elicited in physical examination. Also rapid fatigue after rest might be observed as Cogan's lid twitch (1). There is usually no papillary pathology. In the differential diagnosis, thyroid dysfunction, brain system or cranial neuronal involvement and muscle disease should come to mind. Tensilon test or positive ice test together with history and physical examination are usually all needed for the diagnosis of OMG. Acetylcholine receptor antibodies can be tested to support the diagnosis. Electrophysiological tests (eg: EMG) is performed for antibody negative patients. If there is still suspicion about the diagnosis, brain magnetic resonance imaging (MRI) and cerebrospinal fluid examination can be performed. Tymoma should be ruled out by CT scan of the chest. Acetyl cholinesterase inhibitors are the first choice in treatment. Corticosteroids and Azathioprine are also effective and studies regarding decrease in the progression from ocular myasthenia to general myasthenia are reported (2,3). Thymectomy is indicated both in thymoma and for patients unresponsive or can not tolerate medical treatment (4).

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CASE REPORT

67 years old man patient presented to our clinic with chief complaint of diplopia, which has been present for a year and increased during the last 3 weeks. The diplopia attacks were self-limited and thus he didn't seek medical attention for this temporary complaint until last three weeks when diplopia started to be permanent. He reported no change in diplopia during the day and he denied weakness, fatigue and headache. Past medical history included coronary heart disease and dyslipidemia. In physical examination there was no ptosis of the eyelids, strabismus or visual pathology except diplopia. Eye movements were normal and no diplopia was elicited in downward or lateral gaze. Isolated eye examination shows no monocular diplopia. The patient described diplopia on primary gaze and reported that the distance between the objects increased with long-term up gaze. There was not orbicularis oculi weakness. Another finding in the physical examination was sinus bradycardia but he denied any beta-blocker or similar drug use. In the laboratory finding hemoglobin was 13.6 g/dL, WBC 8,700mm3, blood glucose 82mg/dL, creatinine 0,97mg/dl, creatinine kinase 124 U/dl, lactic (lactate) dehydrogenase 226 U/L, TSH 1,4 IU/mL, ESR 11, CRP 3,2, RF was negative. Chest X-ray revealed normal findings. A vertebrobasilar duplex study, cranial CT and MRI findings were also normal. We couldn't perform tensilon test because of the CAD history and bradycardia. On the other hand anti SMA and acetylcholine receptor antibodies were positive and thus OMG diagnosis was confirmed, pyridostigmine 240 mg/day and methylprednisolone 40 mg/day were started. Remarkable relief in the symptoms was achieved on the seventh day of treatment. No progression to generalized myasthenia was observed during the 1.5 years of follow up and the patient remained symptom free since then.

DISCUSSION

Myasthenia gravis is usually seen in second and third decades in woman, after sixth decade in man. Ocular myasthenia can be accompanied by generalized myasthenia or seen alone in 15% of the cases (1,5). Classic triad of the disease may not be seen. On the other hand, ptosis is a frequent finding in up to 90% of the cases. Vertical diplopia as the only finding in presentation is rare, as well as remaining without progression to generalized myasthenia gravis (GMG). There is no information regarding which kind of diplopia progress more frequently to GMG. Ophthalmologic and neurological evaluations for vertical diplopia could not confirm the diagnosis of myasthenia gravis. Due to clinical suspicion we proceeded with antibody testing as tensilon test was contraindicated because of the bradycardia and history of coronary artery disease.

Presentation with vertical diplopia and remaining without progression to GMG is very rare in the literature. Grob et al (8) reported that only 14% of 1490 patients with myasthenia gravis remained solely as ocular myasteni gravis without progression in long term follow up while 86% progressed to GMG. Evoli et al (3) also reported similar rates about progression. Thus OMG in the differential diagnosis of the patients presenting with long standing symptoms (more than 1 year) should be kept in mind as in our case.

Myasthenia gravis diagnosis requires high clinical suspicion together with physical examination and history taking. Tensilon test is performed using edrophonium. Reversal or decrease of symptoms during the test is typical. Sensitivity of the test is 85-95%, positive acetylcholine receptor antibody is 40-60% sensitive for OMG and 85% sensitive for myasthenia gravis. Packed ice test can be performed easily but the predictive value of the test has not yet been established. The test is helpful in the patients whom tensilon test can not be performed. We directly proceeded to antibody screening for diagnosis in our case, as we were not experienced in packed ice test.

Medial or lateral rectus muscle involvement in myasthenia gravis results in horizontal and binocular diplopia. On the other hand superior or inferior rectus and oblique muscle involvement causes diplopia with vertical and diagonal components (7). Thyroid ophthalmopathy, chronic progressive external ophthalmoplegia (CPEO) and Kearns-Sayre syndrome (KSS), muscular dystrophy, parasellar tumors or aneurysms should be involved in the differential diagnosis of diplopia. Although OMG is characterized by oculomotor paralysis and ptosis, medium orbicularis oculi weakness can accompany in some cases.

Patients see the objects up and down or oblique in vertical diplopia. Eye fatigue test or development of

ptosis during the day and increase in the distance between the objects supports the diagnosis. A detailed history regarding especially childhood strabismus and eye operation is essential. Supranuclear pathologies, oculomotor nerve injury, neuromuscular junctional disease, eye muscle diseases, mechanical eye pathologies and various retinal diseases are in the differential diagnosis of binocular vertical diplopia (5,6).

Acetyl cholinesterase inhibitors (pyridostigmin, mestinon) are the most frequent agents used in the treatment of symptomatic myasthenia gravis (9,10). The dose of the drugs is the same in OMG and GMG. Prednisolon is the most often used immunosuppressive agent. Starting with low doses, increasing gradually to the necessary amounts in 3-4 weeks and treatment on the titrated doses for long periods (weeks even years) is recommended. Maximal dose of the prednisolon is 0,5-1 mg/kg/day and symptom progression is rarely accounted in OMG during high dose treatment. Azathioprine, mycophenolate mofetil, and cyclosporine are reserved for steroid resistance cases and azathioprine has been reported to halt progression of OMG to GMG (8). Although plasmapheresis and IVIG is used in myasthenia gravis they are not used in OMG.

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