CASE REPORT

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A Rare Cause of Acute Respiratory Failure: Myastenia Gravis

Akut SolunumYetmezliğinin Nadir Bir Nedeni: Myastenia Gravis

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ÖZ

Miyastenia gravis, iskelet kaslarında güçsüzlük ve çabuk yorulma ile karakterize bir kas hastalığıdır. Genellikle yakınma kas güçsüzlüğü olsa da bizim olgumuzda olduğu gibi solunum yetmezliği olarak da ortaya çıkabilir. MG, Asetilkolin-esteraz (AChE) inhibitörleri veya immune süpresanlar gibi ilaçlarla ve seçilmiş vakalarda timektomiyle tedavi edilir. Biz burada acil servise solunum yetmezliği ve yutma güçlüğü ile başvuran, MG'li 72 yaşında bir erkek hastayı sunuyoruz.

Anahtar Kelimeler: Akut solunum yetmezliği, miyastenia gravis, miyastenik kriz.

ABSTRACT

Myasthenia gravis (MG) which is an autoimmune disorder, characterized by fluctuating weakness and rapid fatigue in the skeletal muscles. The usual initial complaint is a muscle weakness but can also present as respiratory failure, as in our case. MG is treated with medications such as Acetylcholine-esterase (AChE) inhibitors or immunosuppressants and in selected cases, thymectomy. Here, we present a case of 72 year old male with MG, who admitted to emergency department with respiratory failure and difficulty in swallowing.

Key Words: Acute respiratory failure, myasthenia gravis, myasthenic crisis

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INTRODUCTION

Myasthenia gravis (MG)is a sporadic autoimmune disorder and it is one of the major causes of neurologically induced respiratory distress.[1] Approximately 15% to 20% of patients with MG have a myasthenic crisis (MC), which is defined as respiratory failures requiring mechanical ventilation.[2] MC typically occurs with an infection; however, it can be precipitated by any stressful event or drugs.[3] This study aims to raise awareness for physicians for MG which is presented with acute respiratory failure.

CASE REPORT

A 72 years old male, a follow up case of MG, presented to the emergency department (ED) with complaints of dyspnea and difficulty in swallowing food and liquid for two days.There were no cough, sputum, chest pain, or other respiratory symptoms. The patient was taking a calcium channel blocker for hypertension, sulfonylurea and metformin for type 2 diabetes mellitus. The patient who used pyridostigmine bromide stated that he has not been using this medication for the 2 days.

On the initial physical examination, acute respiratory distress was not seen. Blood pressure was 140/90 mmHg, pulse rate was 120 beats/min, respiratory rate was 24 breaths/min, and body temperature was 36°C. He was awake and the mental status was intact and both cerebral and cerebellar functions were normal. There were no pretibial pitting edema and neck vein infection. Mild

crackles were determined at both lower lung fields on the chest auscultation.

The laboratory test results on admission were within the normal limits except white blood cell count which was slightly elevated (14700/ml). The patient was in respiratory acidosis. Rapid sequence intubation was performed in ED and the patient was transferred to the intensive care unit. A slightly reduced lung volume was seen in chest X-ray (Figure 1). The chest computed tomography (CT) scan showed bibasilar atelectasis and there was no pulmonary thromboembolism (Figure 2).

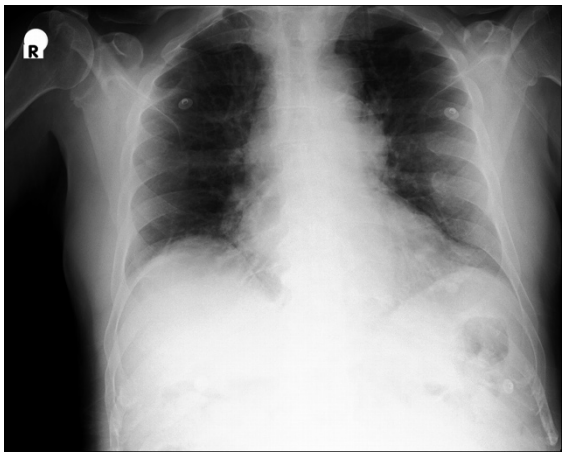

Figure 1. Initial chest radiography showed no definite abnormality.

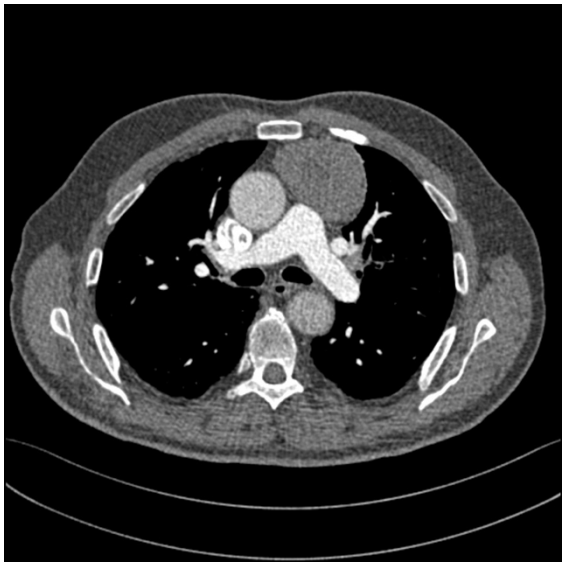

Figure 2. Chest computed tomography scan showed no evidence of pulmonary thromboembolism.

Pyridostigmine bromide and prednisolone were prescribed and intravenous gammaglobulin were administered for 5 days. Two days later, his arterial blood gases were within normal range and he was successfully extubated. The patient was given supplemental oxygen and transferred to the neurology service on the third day of the hospitalization. He was discharged two months later.

DISCUSSION

MC occurs in at least 15-20% of patients with MG, MC identified as an aggravation of myasthenic weakness, which leads to respiratory failure requiring mechanical ventilation.[4] MG has two types: myasthenic and cholinergic crisis. “MC which is occur due to decreased neuromuscular transmission at the synapse, is used to describe muscle weakness. In contrast, excessive depolarization at the neuromuscular junction can lead to cholinergic crisis.”[5]

MG can also be caused by insufficient ventilation or the inability to maintain the upper airway due to bulky muscle weakness. If the patient cannot protect the respiratory tract or have upper airway collapse during inspiration, intubation may also be required. Arterial blood gas and saturation monitoring generally do not help to decide intubation because hypercapnia is a late finding.[6] In our case, the patient was intubated due to protect his airway.

Infections, aspiration, sepsis, surgical procedures, irregular use of drugs, exposure to drugs such as beta-blockers, procainamide are the common precipitating factors for MC.[7] Infectious diseases was excluded with the clinical, laboratory and examination findings. In our case, the precipitating factor wasthe irregular using of the drugs.

There are many treatment options in MG, varying from conservative therapy tosurgery, such as surgical thymectomy. Generally, anticholinesterase agents are used as the first line therapy.[8] In our case, prednisolone, azathioprine and pyridostigmine were given.

In conclusion, patients who present ED with respiratory failure, MC should be kept in mind and treatment should be started without delay. We think that early initiation of

treatment will reduce the need for intensive care and respiratory support in these patients.

Conflict of Interests: The authors declare no conflict of interest.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

REFERENCES

1. Godoy DA, Mello LJVd, Masotti L, Napoli MD. The myasthenic patient in crisis: an update of the management in Neurointensive Care Unit. Arq Neuropsiquiatr 2013; 71(9): 627-639.
2. Ropper A, Gress D, Diringer M, Green D, Mayer S, Bleck T. Treatment of the critically ill patient with myasthenia gravis. Neurological and Neurosurgical Intensive Care, Philadelphia, PA: Lipincott Williams & Wilkins; 2004.
3. Singh P, Idowu O, Malik I, Nates JL. Acute respiratory failure induced by magnesium replacement in a 62-year-old woman with myasthenia gravis. Tex Heart Inst J. 2015; 42(5): 495-497.
4. Bedlack RS, Sanders DB. On the concept of myasthenic crisis. J Clin Neuromuscul Dis. 2002; 4(1): 40-42.
5. Tintinalli JE. Fluoroquinolones should be avoided in myasthenia gravis. Ann Emerg Med. 2004; 44(1): 87-88.
6. Provencio JJ, Bleck TP, Connors Jr AF. Critical care neurology. Am J Respir Crit Care Med. 2001;164(3): 341-345.
7. Spillane J, Hirsch N, Kullmann D, Howard R. 170 Diaphragmatic weakness following thymectomy: due to myasthenia gravis or phrenic nerve injury? J Neurol Neurosurg Psychiatry. 2012; 83(3): 1.
8. Gilhus NE, Verschuuren JJ. Myasthenia gravis: subgroup classification and therapeutic strategies. The Lancet Neurology. 2015;14(10):1023-1036.