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Case Study

A Rare Existence of Myasthenia Gravis with Hypokalemic Periodic Paralysis – A Case Report

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ABSTRACT

Hypokalemic periodic paralysis is a rare, autosomal dominant channelopathy characterized by muscle weakness or paralysis when there is a fall in potassium levels in the blood. Recovery is usually sudden when it occurs, due to release of potassium from swollen muscles as they recover. Weakness can be caused by a number of neurological disorders including Myastenia gravis, Guillain – Barre syndrome. Other than neurologic causes, Electrolyte imbalance is the commonly understood factor. Repeated episodes of weakness associated with low serum potassium levels along with almost normal serum potassium levels in-between attacks make HPP different from other disorders. HPP is a rare neuromuscular disorder that may be associated with thyrotoxicosis, hyperaldosteronism and certain drugs. An occurrence of Myastenia gravis and Hypokalemic Periodic Paralysis together in the same patient has been rarely reported.

Keywords: Myastenia gravis, Hypokalemic Periodic Paralysis, Guillain – Barre syndrome, Plasmapheresis.

INTRODUCTION

Hypokalemic periodic paralysis is a rare, autosomal dominant channelopathy characterized by muscle weakness or paralysis when there is a fall in potassium levels in the blood. During an attack reflexes may be decreased or absent. Attacks may last for a few hours or persist for several days. Recovery is usually sudden when it occurs, due to release of potassium from swollen muscles as they recover.

Bilateral symmetrical weakness is not uncommon and it varies from life threatening illness to electrolyte imbalance. Weakness can be caused by a number of neurological disorders including Myastenia gravis, Guillain – Barre syndrome.

Extraneurological disorder causing weakness is Hypokalemia. Proper diagnosis to understand the cause of hypokalemia becomes difficult at times if the patient has already received potassium supplements.

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CASE REPORT

A 45 year old female presented to emergency department with a history of generalized weakness for 3 days, decreased oral intake and shortness of breath. The weakness was bilateral and symmetrical. Her serum potassium levels were found to be 2.1 mmol/L. She was treated with potassium chloride IV. She experienced similar weakness problems in the past, which were completely reversed by potassium replacement therapy. Serum acetylcholine receptor antibodies test turned to be positive.

Upon presentation blood pressure was found to be 110/70 mm Hg. Heart beat was found to be normal. Breathing was fast and at a rate of 45/min. She was pale and was not moving her limbs and had a power of 2/5 in all the four limbs. Her chest, abdomen and cardiac examinations were normal. She was intubated due to respiratory distress.

Investigations: Haemoglobin of 9.3 g/dL; sodium 150 mmol/L; potassium 2.1 mmol/L; bicarbonate 15 mmol/L; chloride 135 mmol/L; calcium 7.5mg/Dl; liver function tests were normal; total proteins 6g/dL.

Differential Diagnosis: Presented with a history of weakness, not very severe, which used to subside with potassium supplements and Guillain – Barre syndrome being ruled out as the patient was having very low potassium levels she was found to have hypokalemic periodic paralysis.

Treatment: The patient was treated with IV potassium replacement and later oral potassium was given. The power in lower limbs improved, and she started moving her limbs. Serum potassium remained in the upper limit of the normal value. She was given IV steroids, pyridostigmine and underwent plasmapheresis. Her condition improved and she was extubated and was on mechanical ventilation for few days. The patient was discharged on oral steroids 30mg two times per day, pyridostigmine 60mg three times per day and azathioprine 50 mg two times per day.

Follow up: After discharge her condition improved. She was able to walk without support. Her potassium levels were maintained at4 mmol/L. She continuously required 5mEq of potassium per day.

DISCUSSION

Repeated episodes of weakness associated with low serum potassium levels along with almost normal serum potassium levels in-between attacks make HPP different from other disorders. The patient had a history of having weakness which used to reveal when potassium supplements were taken. Myasthenia gravis can be present with localized and generalized weakness. Generalized weakness is a common occurrence in electrolyte disorders. The exact association of MG and HPP in not well understood, there are case reports that support an association between the two disorders.

MG is associated with a number of autoimmune disorders including grave's disease and diabetes mellitus.HPP is a rare neuromuscular disorder that may be associated with thyrotoxicosis, hyperaldosteronism and certain drugs. An Simultaneous occurrences of MG and HPP has been rarely reported.

CONCLUSION

A 45 year old female presented to emergency department with a history of generalized weakness for 3 days, decreased oral intake and shortness of breath. The weakness was bilateral and symmetrical. On evaluation, her serum potassium levels were found to be 2.1mmol/L, she was pale and was not moving her limbs. Patient developed severe respiratory depression and was intubated. Potassium correction was done, IV steroids, pyridostigmine and plasmapheresis was done. Patient was was extubated and was on mechanical ventilation for few days. Discharge summery include prednisolone 30mg two times per day, pyridostigmine 60mg three times per day and azathioprine 50 mg two times per day.

Conflict of interest: None

Patient consent for publication: All appropriate patient consent forms were obtained for her clinical information to be reported in the journal.

REFERENCES

1. Raskin RJ, Tesar JT, Lawless OJ. Hypokalemic periodic paralysis in Sjögren's syndrome. Archives of Internal Medicine. 1981 Nov 1;141(12):1671-3..
2. Vijayakumar A, Ashwath G, Thimmappa D. Thyrotoxic periodic paralysis: clinical challenges. Journal of thyroid research. 2014 Feb 20;2014.
3. Khan FG, Namran S. Coexistence of myasthenia gravis with hypokalemic periodic paralysis: a rare presentation. BMJ Case Reports CP. 2019 Oct 1;12(10):e231241.

4. Sawanyawisuth K, Tiamkao S, Pratipanawatr T. Myasthenia gravis accompanied with hypokalemic periodic paralysis. JOURNAL-MEDICAL ASSOCIATION OF THAILAND. 2006 May 1;89(5):727.
5. Khan FG, Namran S. Coexistence of myasthenia gravis with hypokalemic periodic paralysis: a rare presentation. BMJ Case Reports CP. 2019 Oct 1;12(10):e231241.
6. Huang K, Luo YB, Yang H, Yang XS, Li J. Myasthenia gravis accompanied by Graves' disease, thyrotoxichypokalemic periodic paralysis and thymic hyperplasia. Neurology India. 2016 Jul 1;64(4):783.
7. Takamori M, Maruta T. Receptor diseases in the field of neurology. Rinshobyori. The Japanese journal of clinical pathology. 2000 May;48(5):385-95.