PP001 WEAK, WEAKER, BREATHLESS

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INTRODUCTION

Ascending paralysis usually presents with peripheral weakness of the limbs. Its progression may cause respiratory muscle paralysis over time. It has wide differential diagnoses which needs to be explored for successful management and promising outcome.

CASE PRESENTATION

37 years old gentleman presented with 2days history of bilateral lower limb weakness. He was previously treated for lower limb deep vein thrombosis and remained well prior to presentation. He had no history of fever, vomiting or diarrhoea, no back pain or recent trauma. His general physical examination was unremarkable except an abnormal neurological examination. His lower limbs (level L2/3 and below) were hypotonic, hyporeflexic, with power 2/5 and intact sensation. Other neurological examinations were normal. Vital signs were within range and was afebrile.

Laboratory investigation revealed hypokalemia 1.9mmol/L (3.4 – 4.4mmol/L) and hypophosphatemia 0.33mmol/L (0.74 – 1.52mmol/L). ECG was sinus rhythm with prominent U waves and blood gas did not show any acidosis.

Electrolyte correction was initiated immediately and total of 4g of potassium chloride 10% and 20 mmol of potassium hydrogen phosphate was given over 3hours.

Few hours later, patient developed numbness of upper body and was found to be tachypnoeic. His breathing became shallow and was subsequently intubated. Guillain Barre Syndrome (GBS) was on the top of differential diagnosis and was planned for a lumbar puncture. However, this differential did not fit his presentation of hypokalemia and hypophosphatemia with not significant history suggestive of GBS.

Patient was immediately admitted to ICU post intubation. In ICU, examination revealed fullness in the neck region for which thyroid function test was ordered. Results showed primary hyperthyroidism and treatment was initiated. Within 24hours of commencement of antithyroid treatment, his electrolytes normalized and was successfully extubated. Patient was discharge well on day 4 of admission.

DISCUSSION

Patient with ascending paralysis presents with peripheral weakness which progresses upward and may affect respiratory muscles. Ascending paralysis is a symptom which has wide range of etiology and differential.

Least thought differential is thyrotoxic periodic paralysis. Pathophysiology of hypokalemia which occurs with TPP remains unclear. However, it is postulated as K+ shift intracellularly rather than a depleted K+ state. Increased activity of NA+/K+ - ATPase activity in muscle and platelet of TPP might be a clue. Surge in catecholamine in hyperthyroidism, activates more Na+/K+ - ATPase pump leading to K+ shift intracellularly.

Burch Wartofsky scoring to classify life threatening thyrotoxicosis which is widely used was undiagnostic in our case. Presenting complain, physical findings and performing the correct laboratory investigation together with high index of suspicion leads to successful management of a patient.