An Unusual Case of Hypokalemic Periodic Paralysis secondary to Thyrotoxicosis
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Introduction: Hypokalemic Periodic Paralysis (HPP) is a rare cause of acute weakness. We present an usual case of spontaneous HPP associated thyrotoxicosis in a non-Asian patient.

Case: A 25 year old African-American male was evaluated in the emergency room with complete paralysis. He reported gradual development of stiffness and difficulty moving in the morning. Mild weakness began approximately 1 month before initial evaluation and progressed to a point of being completely unable to get up out of bed on admission. Review of systems was noted for moderate palpitations. He denied changes in diet or activities. He was taking no medications, had no allergies or recent travel. He used no alcohol and smoked ½ pack of cigarettes per day. Family history was non-contributory. On presentation, the patient had a normal temperature and stable vital signs but had complete paralysis of his upper and lower extremities. Laboratory data: Potassium 1.5 Meq/L, phosphorus 1.6 Meq/L; all other baseline labs (including renal function, magnesium and glucose) were normal. The patient was started on aggressive IV potassium supplementation with rapid paralysis improvement. His potassium remained stable and he was discharged home after 3 days with a potassium of 4 Meq/L. The following day, the patient had similar symptoms and was readmitted with a potassium of 2.1 Meq/L. Thyroid function tests revealed TSH 0.01 uIU/mL, and a free T4 of 2.65 ng/dL. In addition to further potassium supplementation, the patient was started on Methimazole. Thyroid ultrasound was consistent with thyroiditis. Over the following 2-3 months as thyroid status improved, all muscular symptoms completely resolved.

Discussion: Thyrotoxic HPP is unusual in North America affecting only 0.1 – 0.2% of thyrotoxic patients and the reported cases are largely in Caucasians. In contrast, Asian populations have a higher incidence of 1.8 – 1.9%. The underlying mechanism remains unclear. This is an unusual case occurring in an African-American male unrelated to any familial, dietary or activity changes. This potentially fatal, but curable disorder must be considered in patients presenting with acute weakness.