Case Report

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"Hyperthyroidism Presenting as Acute Muscular Weakness"

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A 25 year-old Hispanic gentleman without any significant past medical history, presented to the emergency department with a 3 hour history of sudden onset shortness of breath and acute progressive quadriparesis. He specifically denied any recent viral infection, recent travel or illicit drug use. He worked as a "chef" in a local restaurant. On initial physical examination, the patient was a slender male in moderate-to-severe respiratory distress. Blood pressure was 160/90 mmHg, heart rate 150 bpm, respiratory rate 32/minute, temperature 38.5 ºC and oxygen saturation by pulse oximetry of 98%. Bilateral exophthalmos was noted and homogenous enlargement of thyroid gland palpated without tenderness. Lung examination was unremarkable despite his respiratory distress. Heart sounds were normal and no murmurs were heard. Muscle strength in the lower extremities was 0/5, and upper extremities were 2/5. Sensory system examination and deep tendon reflexes appeared within normal limits.

After administration of oxygen and the initiation of an intravenous line, an electrocardiogram was obtained revealing a second degree heart block, right bundle branch block and U waves (See **Figure 1**).

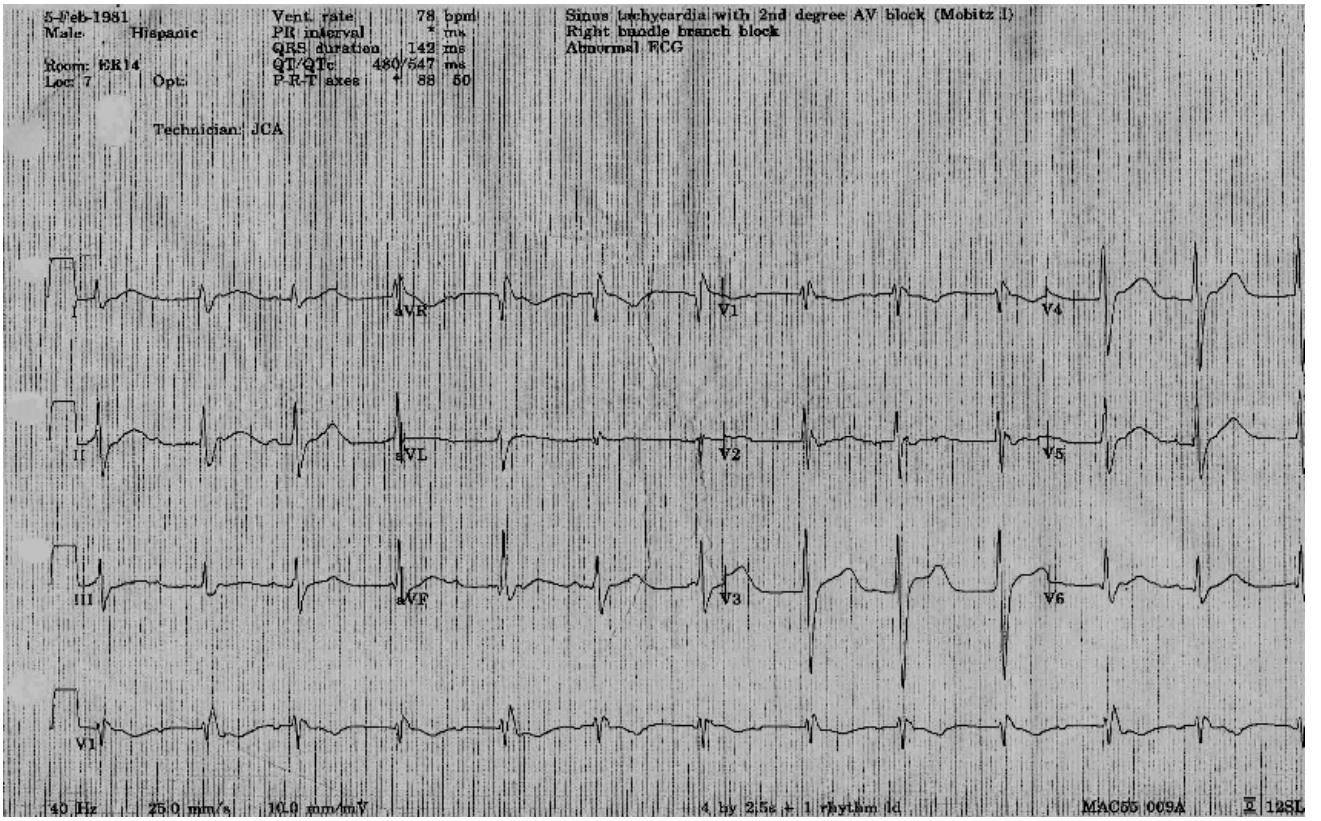

FIGURE 1. INITIAL ELECTROCARDIOGRAM

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Initial laboratory data revealed severe hypokalemia with potassium level of 1.3 mmol/L and a phosphorous of 0.7mg/dL Thyroid stimulating hormone (TSH) level was <0.01μIU, and T4 level was 23.8 μg/dl (normal: 4.5-12.0).

A subsequent electrocardiogram revealed no further U waves few hours after potassium supplementation. The patient was started on propylthiouracil (PTU) 100mg every eight hours, propranolol 40 mg three times per day for a confirmed diagnosis of thyrotoxicosis, and was discharged home 2 days later for out patient follow up.

Hypokalemic periodic paralysis may be associated with hyperthyroidism (thyrotoxicosis-periodic paralysis), especially among Asian men. The nature of relationship between hyperthyroidism and periodic paralysis is not well established, but a mutation in a potassium channel gene (R83H-KCNE3) has been identified in one man with both disorders.