

A case of unilateral jerking movements in a patient with uncontrolled type 2 diabetes mellitus

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HCA MEDICAL CITY HEALTHCARE

UNT-TCU Graduate Medical Education

Internal Medicine

Weatherford, Texas

Our mission

Above all else, we are committed to the care and improvement of human life.



Patient presentation

- Age: 63
- Chief complaint: confusion and slurred speech
- Vitals
 - BP of 169/73
 - SpO2 of 100% on baseline oxygen
- Examination
 - Slight dysarthria
 - Rapid jerking of left upper and lower extremities

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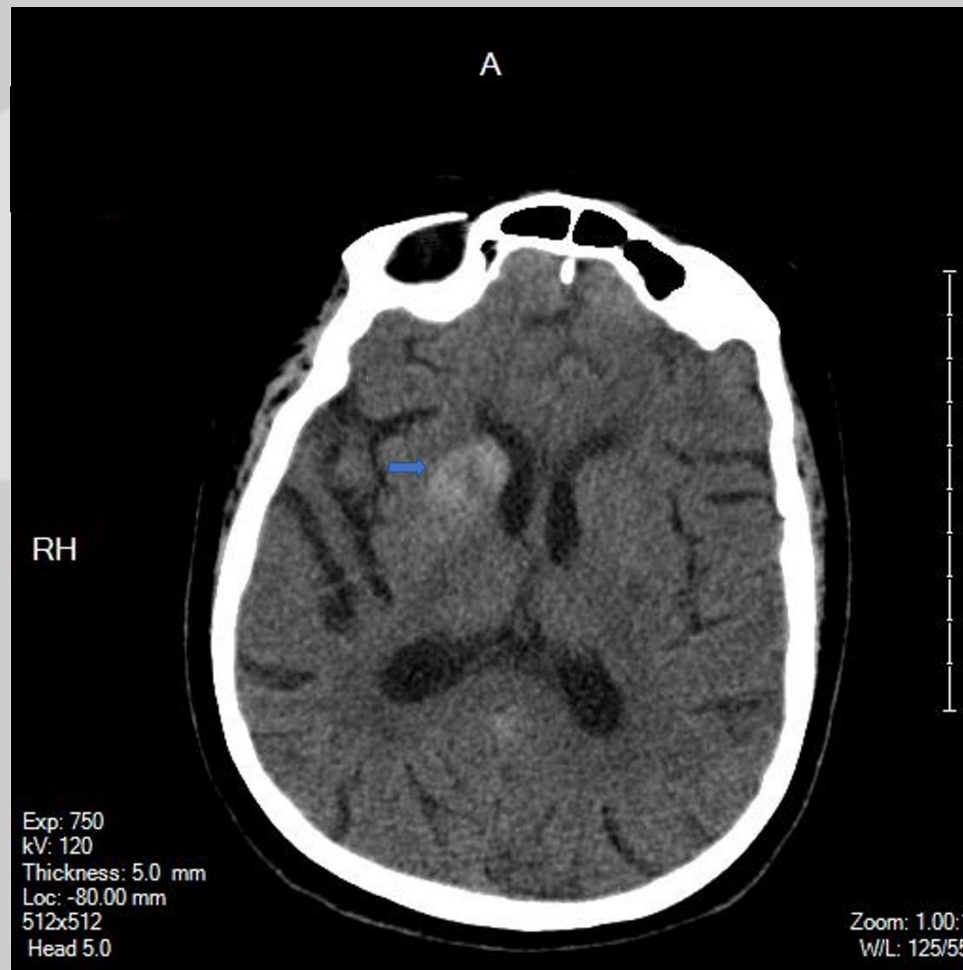
Past medical history

- Uncontrolled hypertension
- Uncontrolled diabetes
- Obstructive sleep apnea
 - Non-adherent with CPAP
- Chronic obstructive pulmonary disease with use of chronic oxygen therapy
- Coronary artery disease

Initial workup

- EMS
 - Blood glucose of > 500 mg/dL
 - 10U regular insulin
- Code stroke was activated
 - CT head without IV contrast
 - CT angiogram of head and neck
- Basic metabolic panel
 - Normal bicarbonate
 - Anion gap of 9
 - Potassium of 5.2 mmol/L (ref range 3.5-5.1)
 - Glucose 295 mg/dL
- Complete blood count
 - Hgb of 13.1 g/dL
 - No leukocytosis

Figure 1. CT head without contrast showing a hyperdense right caudate nucleus and putamen



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Admission

- Initially admitted for subacute stroke
- Neurology consultation obtained
 - MRI Brain
 - Transthoracic echo with bubble study
 - Physical therapy evaluation
 - Speech therapy evaluation
- MRI head/brain
 - Unable to be obtained due to implanted hardware
- Transthoracic echo with bubble study
 - No patent foramen ovale
 - No mural thrombus

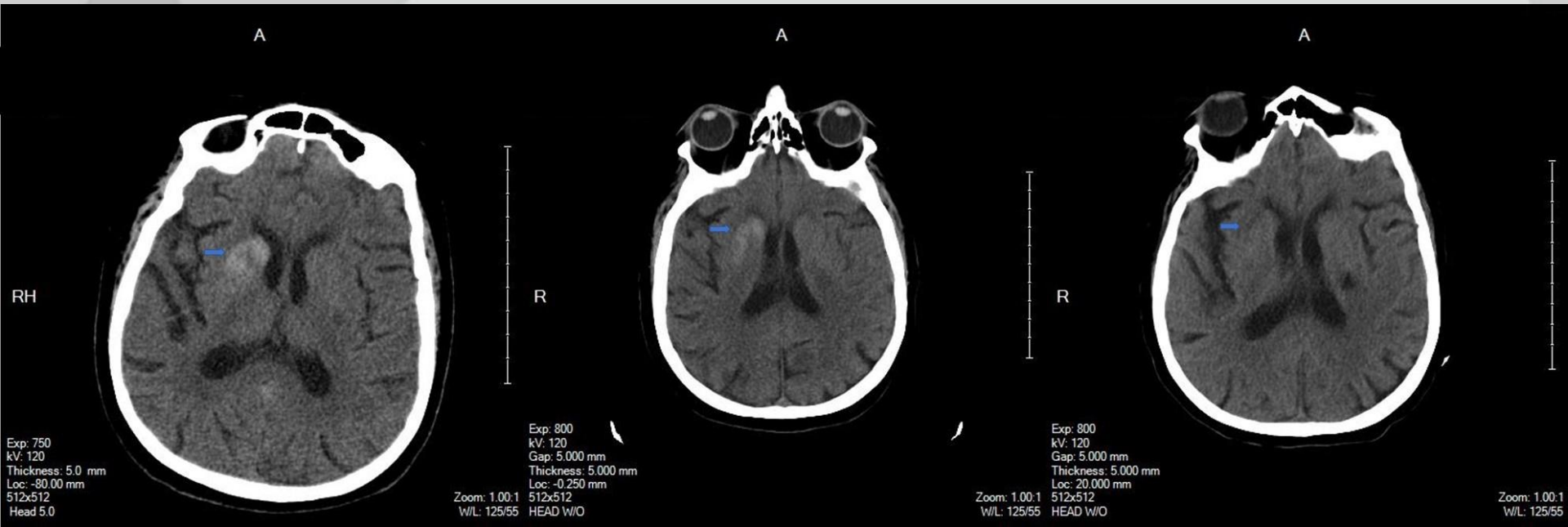
Hospital course

- Diabetic ketoacidosis ruled out
 - No acidosis
 - Normal beta hydroxybutyrate
- Continued encephalopathy
 - Concern for hyperosmolar hyperglycemic state
- A1c of 13.3%
- Literature review conducted for hyperdense basal ganglia
 - Diagnosis of diabetic striatopathy
- Intensive insulin therapy regimen
 - 25U insulin detemir twice per day
 - 20U insulin lispro with meals

Long-term follow up

- Multiple readmissions for generalized weakness
 - 1 admission per month
- Gradual improvement in hemichorea-hemiballismus symptoms
- A1c improved from 13.3% to 6.9%
- Insulin was decreased
 - 10U insulin detemir at bedtime
 - 5U insulin lispro with meals
- CT head without contrast showed resolution of basal ganglia hyperdensity

Figure 2. Serial CT head without contrast images showing interval improvement and resolution of right basal ganglia hypodensity



Background

- First described in 1960
- Patient population
 - Elderly
 - Female > male (1.8:1)
 - Poorly controlled diabetes mellitus
- Triad
 - Involuntary movements
 - Contralateral basal ganglia imaging findings
 - Isolated putamen
 - Caudate nucleus and putamen
 - Hyperglycemia

Treatment

- Treatment of hyperglycemia
 - Oral antihyperglycemic agents
 - Insulin therapy
- Choreic treatment
 - Neuroleptic medications
 - First generation antipsychotics
 - Second generation antipsychotics
 - Vesicular monoamine transporter 2 inhibitor
 - Tetrabenazine
 - Benzodiazepines
 - Clonazepam

References

1. Cosentino C et al. Hemichorea/Hemiballism Associated with Hyperglycemia: Report of 20 Cases. Tremor Other Hyperkinet Mov. 2016;6:402.
2. Gómez-Ochoa SA et al. Clinical and neuroimaging spectrum of hyperglycemia-associated chorea-ballism: systematic review and exploratory analysis of case reports. Funct Neurol. 2018;33(4):175-187.
3. Chua CB et al. "Diabetic striatopathy": clinical presentations, controversy, pathogenesis, treatments, and outcomes. Sci Rep. 2020;10(1):1594.