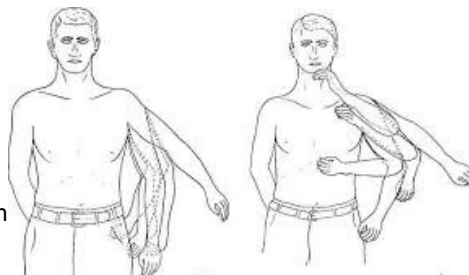


## INTRODUCTION

Hemiballismus is a hyperkinetic movement disorder defined as involuntary movements of a limb or multiple limbs and is believed to be due to ischemia of the basal ganglia. Hyperglycemia is believed to be the second most common cause of acquired hemiballismus. Although it being so common, a lot of physicians are unfamiliar with this correlation. This case report describes a case of a 61 years old male with a long-standing poorly controlled Diabetes Mellitus presenting with an episode of involuntary uncontrollable jerking movement of his left arm, and blood glucose level on presentation was extremely high, and the neurological deficits resolved with good control of his glucose levels. Treating physicians need to have a high index of suspicion while managing similar conditions.

## CASE REPORT

A 61 years old Male was presented to the hospital with the chief complaint of an episode of involuntary uncontrollable jerking movement of his left arm lasting for 1 hour. His past medical history included Diabetes Mellitus Type II and Hypertension. No history of parkinsonism or other neurological disorders was reported. On neurological exam, the patient was fully awake and oriented; tone, sensation, reflexes, coordination was intact, strength was decreased in Left Upper Extremity with drifting of Left Upper Extremity. No choreiform movements were noted during the exam. Laboratory testing revealed a blood glucose level of 750 and an HbA1C level of 14.2. Urinalysis did not show any ketones, the anion gap was normal. CT scan of the head, MRI along with MR Angiography of the head and neck was unremarkable. The patient's blood sugar was controlled with insulin, which led to a steady correction of glucose levels and also the resolution of neurological symptoms.



Visual representation of Hemiballismus

## DISCUSSION

Hemiballismus-hemichorea is characterized by continuous involuntary movements of an entire limb or of multiple limbs on one side of the body which are irregular, of variable amplitude, and poorly patterned. The most common cause of acquired hemiballismus is a stroke. Non-ketotic hyperglycemia is the second most common cause of this condition. This entity is termed as Diabetic Striatopathy (DS). Although this is a well-documented etiology, the prevalence of it being 1 in 100,000, is believed to be underestimated because most physicians are not familiar with the condition. Extreme hyperglycemia causes hyperviscosity of the blood that eventually leads to some degree of ischemia at the basal ganglia level, leading to decreased production of GABA (gamma-aminobutyric acid) and acetylcholine at the basal ganglia, further causing disruption of normal neuronal impulse transmission and circuit. Most cases show a resolution of abnormal movements with control of blood glucose levels. Thus, clinicians must bear in mind that patients with long-standing poorly-controlled blood glucose levels can present with this abnormal movement.