LUPINE PUBLISHERS

Online Journal of Neurology and Brain Disorders

DOI: 10.32474/OJNBD.2022.06.000232

ISSN: 2637-6628

Case Report

Diabetic Striatopathy in a 41-Year-Old Patient with Hyperglycemia Presenting with Involuntary Movement of the Right Extremities

Paul Christian L Sobrevega[1]*, Rolan Lyndon A Osial[1] and Criscely L Go[1]

[1]*Department of Neurology, Jose R Reyes Memorial Medical Center, Philippines*

***Corresponding author:** Paul Christian L Sobrevega, Department of Neurology, Neurology, Jose R Reyes Memorial Medical Center, Philippines

Received: January 12, 2022 **Published:** January 26, 2022

Introduction

Hemichorea/hemiballism is a hyperkinetic movement disorder characterized by acute or subacute onset of high amplitude, involuntary movements affecting one side of the body. In rare cases, movement disorders occur in nonketotic hyperglycemia, with chorea noted in association with neuroimaging abnormalities of the basal ganglia. Ischemic/hemorrhagic stroke within the contralateral subthalamic nucleus (STN) and basal ganglia and nonketotic hyperglycemia are the most common causes of hemichorea/hemiballismus. Diabetic Hemiballismus/hemichorea, also called Diabetic Striatopathy, is a unique syndrome characterized by hemichoreaic movement, hyperglycemia, and striatal hyperintensity on T1-weighted magnetic resonance image (MRI) in a poorly controlled patient with diabetes. Dyskinesias, including hemichorea-hemiballism, occur because of the dysfunction of the corpus striatum and are usually reversible with the restoration of homeostasis. It is an underdiagnosed complication of diabetes that is more frequently encountered in Type 2 diabetes. Presently, there are a limited number of case reports on Hyperglycemia with unilateral movement disorder. Moreover, there are no available researches on patients diagnosed with this hyperglycemia with unilateral movement disorder in the Philippines [1-5].

Case Description

A 41-year-old female, diagnosed case of diabetes mellitus type II poorly compliant, came into our institution with a chief complaint of involuntary movement of the right extremities. History started 1 week prior to consult, while watching TV, the patient started to experience twitching of the right side of face that persists even at rest. This resulted in slurred speech but had no difficulty in swallowing. There was no focal weakness, loss of consciousness, or stiffening of extremities. She went to a private clinic in Tondo. Wherein consideration was stroke. BP taken was 110/80. Then she was sent home with unrecalled medications. Two days after, around 9pm, there was still persistence of twitching of the right side of the face, she now experienced multiple, quick, involuntary, random movement of the right upper and right lower extremities. There was no focal weakness, loss of consciousness, or stiffening of extremities. There was no consultation done and no medications taken. She tolerated her condition and went to sleep. The following day, the patient went back to her private doctor for follow-up. BP taken was 110/80. Assessment was undisclosed. She was advised consult with a neurologist and was referred to Jose Reyes Memorial Medical Center. She went home instead, still with persistence of involuntary movement, hence, had difficulty eating and brushing her teeth using her right hand. Four days after, due to persistence of symptoms. The patient consulted at Jose Reyes Memorial Medical Center Neurology OPD where Plain Cranial CT scan was done and revealed hyperdensity focus on left basal ganglia.

The patient had a history of diabetes mellitus for 12 years. She was uncompliant to medications and was lost to follow-up. She also had a history of hypertension for 2 years. She was uncompliant to medications and was lost to follow-up. She also had a history of CVD infarct in 2017 MRS1 who first presented with left sided weakness. She was started on Aspirin and Atorvastatin but was uncompliant. The patient has no history of asthma or allergies to food or medications. She has no history of trauma or travel. She has an unrecalled immunization history. She is a previous smoker, previous alcoholic drinker and denies illicit drug use [6-11]. On neurologic examination, she was oriented to time, place and person. She can follow commands. There was noted central facial palsy on the left. On motor examination, she had a motor strength of 5/5 on all extremities. An 80% sensory deficit on her left upper and lower extremities.. She was observed to have multiple quick, random movements of right upper and right lower extremities, moderate to

Copyright © All rights are reserved by Paul Christian L Sobrevega.

strong, and continuous in pattern. He had no sensory deficit and is normoreflexive. No frontal release signs or parietal signs noted. A cranial CT scan of the patient was done which revealed hyperdensity on left striatal area (Figure 1). Evaluation for secondary causes of movement disorder were requested. Serum electrolytes, renal and liver functions as well as complete blood count were all normal. Her Fasting Blood sugar and HbA1c were elevated and was started on oral hyperglycemic agents and insulin. She was then referred to endocrinology. Cranial MRI with contrast was done which revealed the following: On T1 sequence (Figure 2), there is hyperintense signal noted at the left striatal area with no contrast enhancement (Figure 3). On DW1 and ADC sequence (Figure 4), there was a noted hypointensity on right basal ganglia and there was no fluid restriction noted. The patient was advised to check her random blood sugar and regular follow-up with her endocrinologist. Upon control of hyperglycemia, there was observed improvement of involuntary movement of the right extremities.

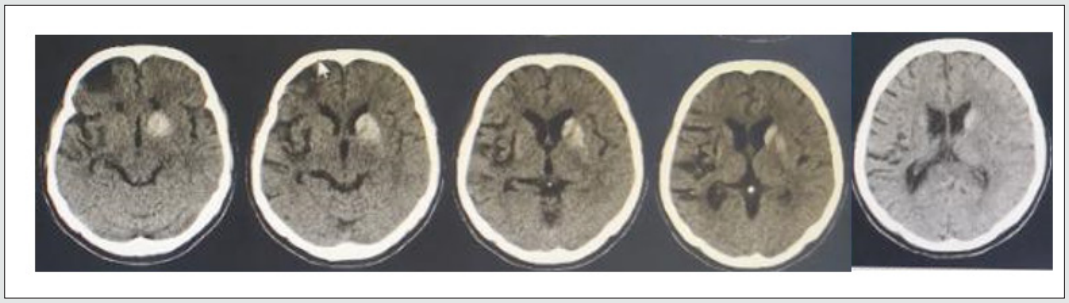


Figure 1: Cranial CT scan on Axial View.

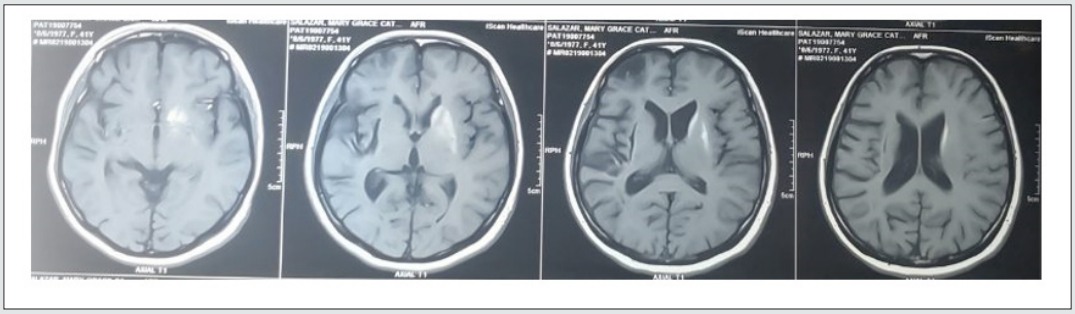


Figure 2: Cranial MRI with contrast T1 sequence.

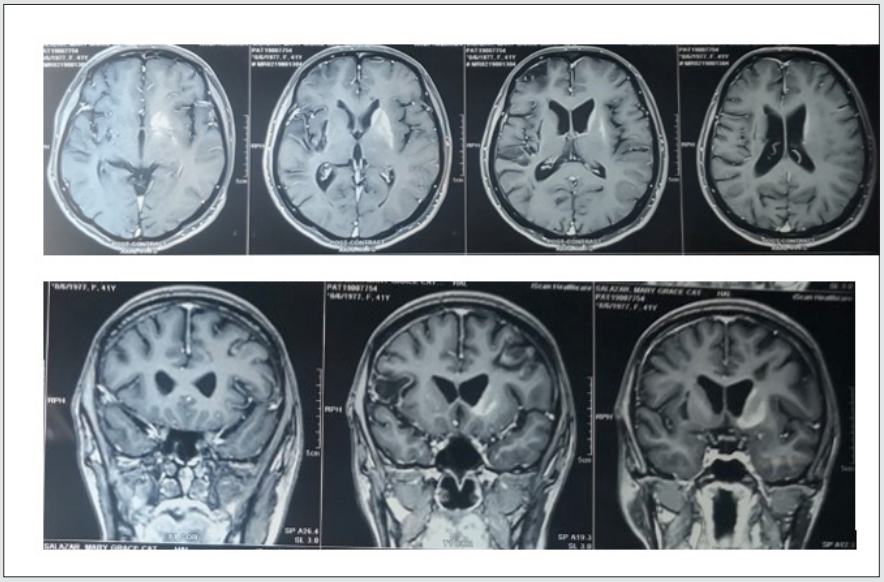


Figure 3: Cranial MRI with contrast T1 post-contrast sequence.

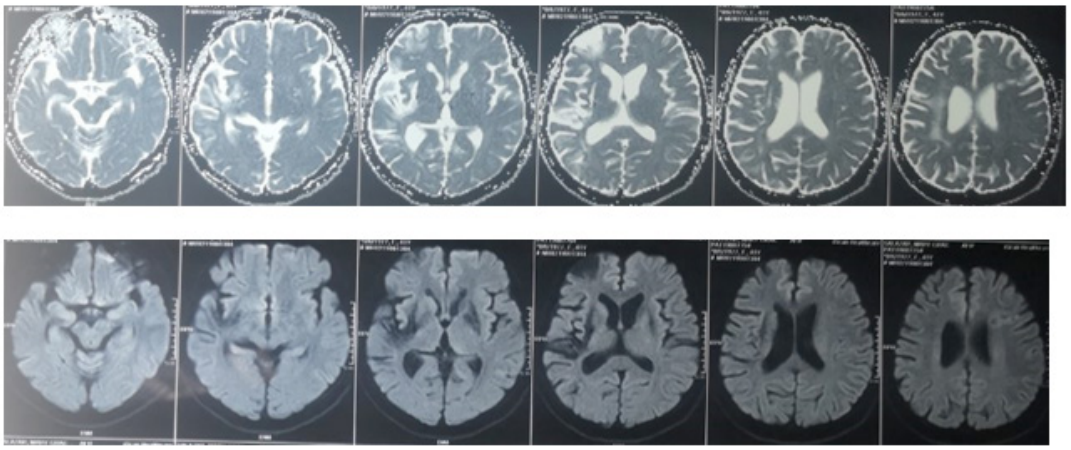


Figure 4: Cranial MRI with contrast DW1 and ADC sequences.

Discussion

The patient in this case presented with hyperglycemia and involuntary movement of the right extremities. Diabetes Mellitus is a serious, chronic and complex illness characterized by hyperglycemia that resulted when the body cannot efficiently custom the insulin. The world health organization has categorized Diabetes Mellitus as the seventh leading disease cause in USA while it was estimated that 422 million adults present diabetes in 2014. There is little to no data available of reported cases of hyperglycemic patients presenting with involuntary movement disorder or diabetic striatopathy worldwide. Diabetes Mellitus is a preventable disease. In our case, controlling the patient's hyperglycemia resulted in improvement of her involuntary movements. Presently, there are a limited number of case reports on Hyperglycemia with unilateral movement disorder. Moreover, there are no available researches regarding prevalence and incidence of patients diagnosed with this hyperglycemia with unilateral movement disorder in the Philippines. In a recent study, only a few patients of this syndrome have undergone postmortem pathological studies. The present findings that this syndrome is not due to a cerebral infarction or hemorrhage but involves a vasculopathy uniquely restricted to the striatum of diabetic patients. Diabetes mellitus is a common disease and many of its complications have already been studied. In recent researches, involuntary movement could also be associated with hyperglycemia or diabetes mellitus.

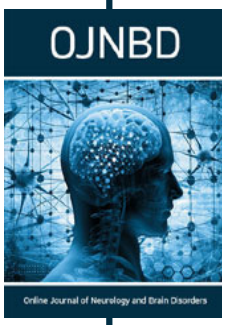
References

1. Yoshinari Abe, Teiji Yamamoto, Tomoko Soeda, Tomohiro Kumagai, Yoshihiro Tanno, et al. (2009) Diabetic Striatal Disease: Clinical Presentation, Neuroimaging, and Pathology. Intern Med 48(13): 1135-1141.
2. Byung chul son, Jin Gyu Choi, Hak Cheol Ko (2017) Globus Pallidus Internus Deep Brain Stimulation for Disabling Diabetic Hemiballism/Hemichorea. Case Rep Neurol Med pp. 2165905.
3. Mayur Chalia, Thyagarajan Subramanian (2018) Type 2 Diabetes Presenting with Persistent Chorea. JAMA Neurol 76(3): 366-367.
4. Mehmet Evren Okur (2017) Diabetes Mellitus: A Review on Pathophysiology, Current Status of Oral Medications and Future Perspectives. Acta Pharmaceutica Sciencia 55(1): 61-82
5. Millan Perez Sonia, Agatón Catalina, Cuineme Sandra, Mora Javier (2018) Hemi chorea as a first clinical manifestation of diabetes type 2. Case report and review of literature. Journal of Neurology & Stroke J Neurol Stroke 8(5): 270-271.
6. Chiu Jung Lin, Poyin Huang (2017) Delayed onset diabetic striatopathy: Hemichorea-hemiballism one month after a hyperglycemic episode. The American Journal of Emergency Medicine Volume 35(7): 1036.
7. Seung Hun Oh, Kyung Yul Lee, Joo Hyuk Im, Myung Sik Lee (2002) Chorea associated with non-ketotic hyperglycemia and hyperintensity basal ganglia lesion on T1-weighted brain MRI study: A meta-analysis of 53 cases including four present cases. J Neurol Sci 200(1-2): 57-62.
8. Tamara Faundez, Philippe Klee, Sylviane Hanquinet, Valérie Schwitzgebel, Pierre R Burkhard, et al. (2015) Diabetic Striatopathy in Childhood: A Case Report. Pediatrics 137(4): e2014376.
9. Mary Kate McCullen (2010) Chorea in the Setting of Hyperglycemia – A Case Report and Review of the Literature.
10. S Lin, Dorr J, Pandit R, Patel M (2017) Two Cases of Diabetic Striatopathy: A Rare Movement Disorder Associated with Uncontrolled Diabetes Mellitus. American Society of Neuroradiology 8(6): 424-427.
11. Giselle F Taboada, Giovanna A B Lima, José E C Castro, Bernardo Liberato (2012) Dyskinesia associated with hyperglycemia and basal ganglia hyperintensity: Report of a rare diabetic complication. Metab Brain Dis 28(1): 107-110.

This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here: Submit Article

DOI: 10.32474/OJNBD.2022.06.000232



Online Journal of Neurology and Brain Disorders

Assets of Publishing with us

- Global archiving of articles
- Immediate, unrestricted online access
- Rigorous Peer Review Process
- Authors Retain Copyrights
- Unique DOI for all articles