Case Report

Hyperglycemia: An Unusual Cause for Hemichorea

S. Harsha, A.N. Aparna[1]

Departments of Neurology and [1]Internal Medicine, J.S.S. Medical College, J.S.S. University, Mysore, Karnataka, India

Abstract

Hemichoreais a rare neurologic disorder due to oxidative stress leading to neurodegenerationof the dentate nuclei and striata. It is rarely observed in diabetes. One such case occurring in an adult female diabetic is described here.

Keywords: Hemichorea, hyperglycemia, treatment

Introduction

India, the world's second most populous country, now has more people with type 2 diabetes (more than 50 million) than any other nation. It leads to complications related to every system of the body. Hyperglycemia in diabetic patients is an important cause leading to oxidative stress in central nervous system (CNS). This oxidative stress is an important factor in the pathogenesis of neuron degeneration in CNS.[1] This could lead to hemichorea clinically and hyperperfusion in dentate nuclei and striata, leading to striatal hyperintensity on MRI. The condition was first described in humans by Rector *et al.* in 1982. We hereby report an interesting case of hemichorea due to hyperglycemia with complete remission of symptoms after control of blood sugar level.

Case Report

A 35-year-old female came to the outpatient department with involuntary movements of the left half of the body since 3 days, progressive, preceded by a short febrile illness. Movements were sudden in onset and persisted throughout the day making it difficult for her to fall asleep. However they disappeared during sleep.

The patient was not known a diabetic or a hypertensive. There was no history of thyroid dysfunction and history of no similar episodes in the past.

On examination, the patient was vitally stable. The patient was having choreiform movements of left upper and lower limb. She could not voluntarily suppress the movements. Plantar reflex showed bilaterally flexor response. Sensory system was intact. Systemic examination of all other systems was unremarkable.

Investigations revealed that her blood counts, thyroid profile, liver function test, renal function test, serum electrolytes were all within the normal limits. Her Antistreptolysin O (ASLO) titer was also negative. Her random blood sugar was 572 mg/dl. The patient was started on tab. Haloperidol 1 mg three times a day and was slowly uptitrated to 1.5 mg three times a day. Meanwhile the patient was also started on regular insulin of 8 units subcutaneously tid which was adjusted according to her blood sugars. The patient gradually improved with haloperidol and with control of her blood sugars. As her blood sugars were controlled, her choreiform movements subsided remarkably. It was decided to start Haloperidol as the movements were severe and disabling. Slit lamp examination was done which ruled out the presence of K-F ring. Her cranial CT scan was normal.

Hence a diagnosis of hemichorea due to hyperglycemia was made.

Discussion

Hyperglycemia is known to cause neurological abnormalities. One of the rare abnormalities is hemichorea.[2,3] Various mechanisms have been postulated. Some have suggested that it causes ischemic changes in the striatum associated with hyperglycemia and hyperviscosity. Examinations by [18 F] fluorodeoxyglucose (FDG) positron emission tomography (PET) have documented markedly reduced rates of cerebral glucose metabolism in the corresponding lesions on T1-weighted magnetic resonance

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Address for correspondence: Dr. S. Harsha, Department of Neurology, J.S.S. Hospital, Ramanuja Road, Mysore - 570 004, Karnataka, India.
E-mail: drharshneur@gmail.com

images thus providing direct evidence of regional metabolic failure.[3] The metabolic derangements associated with hyperglycemia and vascular insufficiency contribute to regional metabolic failure in patients with poorly controlled diabetes mellitus. These hyperintense lesions have been shown to be reversible on follow up scans after adequate glycemic control.[4]

Some researchers have also found Topiramate and pimozide effective in controlling the involuntary movements in such cases. Ahlskog *et al.* reported in a case series of five cases of HCHB. Four patients did not improve and had persistent involuntary movements despite the glycemic control on five year follow up. One of them did not have any striatal hyperintensity. The cause could not be ascertained of this unresponsiveness.[5]

Conclusion

Hemichorea due to hyperglycemia is a rare clinical situation and the patient should be investigated accordingly and treated appropriately with a good glycemic control which can relieve the patient of the symptoms. Hence, this rare possibility has to be kept in mind.

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