

HASHIMOTO'S ENCEPHALOPATHY: A FREQUENTLY MISSED DIAGNOSIS

Mohamed Osama Hegazi¹, Mubarak Alajmi², Yasser M Ateya³

ABSTRACT

Hashimoto's encephalopathy is described as a syndrome of encephalopathy and high serum antithyroid antibodies that is responsive to glucocorticoid therapy. We report a patient with overt hypothyroidism who presented with stroke-like episodes and a status epilepticus which responded dramatically to intravenous methylprednisolone given for a severe bronchospasm following aspiration. The high antithyroid antibody titers and the response to steroids supported the diagnosis of Hashimoto's encephalopathy. The diagnosis of Hashimoto's encephalopathy is generally under diagnosed and often missed at presentation.

KEY WORDS: Autoimmune, Encephalopathy, Hashimoto, Thyroiditis, Steroids.

Pak J Med Sci April - June 2008 (Part-I) Vol. 24 No. 2 314-316

INTRODUCTION

Hashimoto's encephalopathy (HE) or, in another term, steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT) is associated with Hashimoto's thyroiditis and high levels of anti-thyroid auto-antibodies. It is an uncommon poorly understood disorder that may be underdiagnosed and is often misdiagnosed at presentation.^{1,2} It is a rare condition and there are only a few dozen cases diagnosed in the world.

We report a patient with overt hypothyroidism who presented with stroke-like episodes and a status epilepticus which responded dramatically to intravenous methylprednisolone given for a severe bronchospasm following aspiration in a background of bronchial asthma. The high antithyroid antibody titers and the response to steroids supported the diagnosis of HE especially after excluding other etiological possibilities.

CASE REPORT

A 68 year-old man with a background of type 2 diabetes mellitus, mild bronchial asthma, hypothyroidism on replacement therapy, and a review at psychiatry clinic for recent onset of behavioral abnormalities presented with vague symptoms including fatigue, body aches and constipation. Clinical examination revealed an obese conscious man with a slow hoarse speech, bradycardia of 45beats/min, and a mild diffuse goiter. There was no fever, the neck was lax, and he did not show any focal neurologic deficits.

All initial blood investigations were normal apart from normocytic anemia with hemoglobin of 10gm/dL. The whole clinical picture was suggestive of overt hypothyroidism. On

-
1. Mohamed Osama Hegazi, MRCP (UK), Senior Registrar, Medical Department,
 2. Mubarak Alajmi, ABIM, FRCPC, ICU and Respiriology Consultant, Respiriology Department,
 3. Yasser M Ateya, MSc. Registrar, Medical Department,
- 1-3: Al Adan Hospital, Kuwait

Correspondence

Dr. Mohamed Osama Hegazi,
P.O. Box 47813,
Fahaheel, 64029,
Kuwait.
Email: drosama02@gmail.com

* Received for Publication: November 24, 2007

* Accepted: February 15, 2008

the second hospital day, the patient was evaluated for an acute confusional state and a suspected stroke. Brain computed tomography was normal and neurological re-evaluation was unremarkable. However, on the fourth hospital day, he developed three repeated generalized convulsions followed by prolonged unresponsiveness and severe bronchospasm, a deterioration that led him to ICU as a case of status epilepticus and aspiration pneumonia. In ICU, he received intravenous antibiotics, phenytoin, and methylprednisolone 60mg/6 hours to relieve the severe bronchospasm. Cerebrospinal fluid examination showed: protein =840mg/L, Neutrophils = 0/hpf and red cells = 5/hpf. Brain Magnetic resonance imaging (MRI) was normal. He regained consciousness, passed an uneventful course in ICU and, transferred back to ward in a stable condition within 72 hours.

By this time laboratory investigations showed TSH= 42 μ IU/ml (Normal 0.3-5.0), T4=2pmol/L (Normal 7-21). The unexpected dramatic improvement on steroids made us request thyroid antibodies and results showed: thyroperoxidase antibody (anti TPO) =89.76IU/ml (Normal=0-34IU/ml) and thyroglobulin antibody (anti TGB) =197.8IU/ml (Normal=0-115IU/ml) thus supporting the diagnosis of Hashimoto's encephalopathy. Oral Prednisolone (60mg/d) was continued with gradual tapering after four months. Electroencephalogram (EEG) two weeks after discharge was reported as normal. On follow up, the patient showed clinical and biochemical improvement of hypothyroidism and no reported fits or behavioral changes.

DISCUSSION

Hashimoto Encephalopathy (HE) is described as a syndrome of encephalopathy and high serum antithyroid antibodies that is responsive to glucocorticoid therapy.³ Neurological presentations of HE include recurrent severe migrainous headache, psychoses, seizures, ataxia, dementia, stupor and coma.⁴ Our case was diagnosed retrospectively when high serum

antithyroid antibodies supported a suspicion of HE based on history of hypothyroidism, two attacks of suspected strokes with normal CT brain, presentation with status epilepticus with no obvious cause, and the strange rapid recovery of a critically ill ICU patient who received steroids for some other reason. Castillo et al stated that misdiagnosis at presentation is common. Seizures are common with HE and presentations with status epilepticus including a fatal form have been also observed.⁵ EEG is reported to be abnormal in 90% of cases of HE, and there is a correlation between clinical and EEG improvements on steroid therapy.⁶ CSF analysis is especially important to thoroughly exclude infection, Creutzfeldt- Jacob disease (by testing CSF for 14-3-3 protein) and paraneoplastic encephalopathy (CSF cytology and antibody testing).⁶ Ferracci et al stated that positive antithyroid antibodies in CSF is a distinctive marker of HE, but there is no correlation between the titer of these antibodies and clinical improvement.⁷ MRI may differentiate HE from acute disseminated encephalomyelitis (ADEM).⁴

There is no relation to thyroid status as HE occurred with thyroid functions varying from overt hypothyroidism to overt hyperthyroidism, and the most common abnormality was subclinical hypothyroidism (35%).^{3,5} High serum levels of antithyroid antibodies (anti TPO and/or anti TGB) is an essential laboratory feature of HE, but titer does not correlate with severity or improvement.^{3,5} Treatment initially consists of high dose Prednisolone (iv methylprednisolone 1g/day or oral Prednisolone 50-150mg/day) for 3-7 days followed by gradual tapering over weeks-months.⁵ Response to treatment is rapid, usually within one week and sometimes as early as one day.⁵

Because of the unclear mechanism of pathogenesis of HE, steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT) is preferred by some authors.² Further studies and case reports may help ascertaining the existence, exact nature and pathogenesis of the syndrome. However, an important point to remember is that this

disease is very often misdiagnosed and labeled as viral encephalitis (25%), degenerative dementia (20%), Creutzfeldt Jakob disease (15%).²

REFERENCES

1. Ghika-Schmid F, Ghika J, Regli F, Dworak N, Bogousslavsky J, Städler C, et al. Hashimoto's myoclonic encephalopathy: an underdiagnosed treatable condition? *Mov Disord* 1996;11(5):555-62.
2. Castillo P, Woodruff B, Caselli R, Vernino S, Lucchinetti C, Swanson J, et al. Steroid-responsive encephalopathy associated with autoimmune thyroiditis. *Arch Neurol* 2006;63(2):175-6.
3. Chong JY, Rowland LP, Utiger RD. Hashimoto encephalopathy: Syndrome or myth? *Arch Neurol* 2003;60(2):164-71.
4. Chaudhuri A, Behan PO. The clinical spectrum, diagnosis, pathogenesis and treatment of Hashimoto's encephalopathy (recurrent acute disseminated encephalomyelitis). *Curr Med Chem* 2003;10(19):1945-53.
5. Marshall GA, Doyle JJ. Long-term treatment of Hashimoto's encephalopathy. *J Neuropsychiatry Clin Neurosci* 2006;18(1):14-20.
6. Kothbauer-Margreiter I, Sturzenegger M, Komor J, Baumgartner R, Hess CW. Encephalopathy associated with Hashimoto thyroiditis: diagnosis and treatment. *J Neurol* 1996;243(8):585-93.
7. Ferracci F, Moretto G, Candeago RM, Cimini N, Conte F, Gentile M, et al. Antithyroid antibodies in the CSF: their role in the pathogenesis of Hashimoto's encephalopathy. *Neurology* 2003;60(4):712-4.