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CASE REPORT

A Rare Case of Endocrinal Encephalopathy

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Abstract

Acute meningoencephalitis due to various infectious etiology is routinely diagnosed in clinical practice. Hashimoto's thyroiditis masquerading as acute meningoencephalitis is a rare clinical entity. High index of suspicion with early initiation of treatment results in a favorable outcome without any neurological deficits. We herein report a rare case of Hashimoto's thyroiditis presenting itself with acute meningoencephalitis.

Keywords: Viral infections, Meningoencephalitis, autoimmune thyroiditis, steroid responsive encephalopathy.

Introduction

Acute meningoencephalitis due to various infectious etiology is routinely diagnosed in clinical practice. Hashimoto's thyroiditis masquerading as acute meningoencephalitis is a rare clinical entity. High index of suspicion with early initiation of treatment results in a favorable outcome without any neurological deficits. We herein report a rare case of Hashimoto's thyroiditis presenting itself with acute meningoencephalitis.

Case Report

25-year-old female patient presented to the emergency department (ED) with history of fever, headache, loose stools, vomiting followed by altered sensorium of one-week duration. Patient had 3 episodes of new onset generalized tonic clonic seizures prior to the arrival at the emergency department. On examination, patient was unconscious with irregular breathing pattern. Glasgow coma scale was E1M1V1 for which emergency intubation was done and started on mechanical ventilator support. T2 weighted magnetic resonance imaging showed diffuse cerebral edema. A provisional diagnosis of acute meningoencephalitis was made and patient was started on intravenous Acyclovir, Ceftriaxone, Levetiracetam, Mannitol and dexamethasone. Lumbar puncture for Cerebro Spinal Fluid (CSF) analysis showed total count of 24 cells with predominant lymphocytes (90%), mild elevation of proteins (65mg/dl) and normal CSF sugar levels(58mg/dl). CSF analysis for Adenosine Deaminase was within normal limits. CSF polymerase chain reaction for viral meningoencephalitis panel and tuberculosis were negative. In view of persistent tachycardia and fever, thyroid function test was done. TSH was decreased (0.09μIU) with elevated total T4(24.86ng/ml) and normal T3(1.66μg/ml) levels. Anti-thyroid peroxidase antibodies were significantly elevated (600IU/μl) favoring autoimmune thyroiditis. Ultrasound of the thyroid was normal. The diagnosis of steroid responsive encephalopathy due to autoimmune thyroiditis (SREAT) was made. Hence, injection acyclovir was stopped on 3rdday of admission but was continued with intravenous dexamethasone as the patient general condition was improving day by day. She was extubated on 4thday and was discharged on 7th day of admission with tapering dose of steroids and anticonvulsant drugs. During follow up, patient was conscious, remained seizure free without any residual neurological deficits.

Discussion

The first description of Steroid responsive encephalopathy with autoimmune thyroiditis (SREAT) dates back to 1966 by Brain et al. [1]. The most common presentation of SREAT being encephalopathy, it can also manifest with seizures, cognitive dysfunction, ataxia and cerebrovascular accident [2-4]. Various other terminologies for SREAT includes "Non-vasculitic autoimmune meningoencephalitis" or "Anti-TPO/Tg antibody-related neurologic disorders responsive to steroids (ATANDS)" [2]. The pathophysiology remains uncertain. However, vasculitis and autoimmune mediated injury to the brain has been implicated as a plausible mechanism [5]. Anti-thyroid antibodies may be initially normal in patients with SREAT and neurological manifestations sometimes precede the development of

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autoimmune thyroiditis during follow up [6]. No definitive diagnostic criteria have been laid down till date to make the diagnosis of SREAT [7]. Hence, diagnosis of SREAT is considered only after excluding the common etiologies of acute meningoencephalitis including tuberculosis especially in endemic country like India. Rapid response to steroids further supports the diagnosis of SREAT [8,9]. To conclude, the practicing physician should be aware of this rare clinical condition of SREAT while evaluating for acute meningoencephalitis. Persistence of fever, tachycardia, altered sensorium with thyroid function abnormalities in a patient presenting with acute meningoencephalitis might be a clinical clue for diagnosis for endocrinal encephalopathy. Early treatment with steroids ensures a favourable outcome.

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References

1. Liyanage CK, Munasinghe TMJ, Paramanantham A. Steroid-Responsive Encephalopathy Associated with Autoimmune Thyroiditis Presenting with Fever and Confusion. Case Rep Neurol Med. 2017:1-4.
2. Termsarasab P, Pitakpatapee Y, Frucht SJ, Srivanitchapoom P. Steroid-responsive Encephalopathy Associated with Autoimmune Thyroiditis (SREAT) Presenting with Pure Cerebellar Ataxia. Tremor Other Hyperkinet Mov (N Y). 2018; 8:585.
3. Vijayakumar Javalkar, Syed Abbas, Meghan Harris. Steroid responsive encephalopathy associated with autoimmune thyroiditis (SREAT) with stroke like symptoms. A case report. Neurology 2015;84(14 Suppl.):P5.104
4. Endres D, Perlov E, Stich O, Tebartz van Elst L. Steroid responsive encephalopathy associated with autoimmune thyroiditis (SREAT) presenting as major depression. BMC Psychiatry. 2016;16:184.
5. Juraj Payer, Tomas Petrovic, Lubomir Lisy and Pavel Langer. Hashimoto Encephalopathy: A Rare Intricate Syndrome. Int J Endocrinol Metab. 2012 Spring; 10(2):506–514.
6. Peschen-Rosin R, Schabet M, Dichgans J. Manifestation of Hashimoto's encephalopathy years before onset of thyroid disease. Eur Neurol. 1999;41(2):79-84.
7. Kirshner HS. Hashimoto's encephalopathy: a brief review. Curr Neurol Neurosci Rep. 2014;14(9):476.
8. Nayak HK, Daga MK, Kumar R et al. A series report of autoimmune hypothyroidism associated with Hashimoto's encephalopathy: an under diagnosed clinical entity with good prognosis. BMJ Case Rep. 2010 Nov 23:1-3
9. Laurent C, Capron J, Quillerou B et al. Steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT): Characteristics, treatment and outcome in 251 cases from the literature. Autoimmun Rev. 2016 Dec;15(12):1129-1133.