

Persistent Symmetrical Bilateral Hypertension on Dwi In A Patient with Hashimoto's Thyroiditis: A Case Report

Shu-laiZhu^{1*}, Xin-xin Pan², Yu-hua Peng¹

¹Department of Neurology, The Second People's Hospital of Liaocheng City, The Second Hospital of Liaocheng Affiliated to Shandong First Medical University, Linqing 252600, Shandong Province, China.

²Department of Cardiac Ultrasound of The Second Peoples' Hospital of Liaocheng Affiliated to Shandong First Medical University, Linqing 252600, Shandong Province, China.

*Corresponding author

Shu-laiZhu, Department of Neurology, The Second People's Hospital of Liaocheng City, The Second Hospital of Liaocheng Affiliated to Shandong First Medical University, Linqing 252600, Shandong Province, China

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Abstract

We report a case diagnosed Hashimoto's encephalopathy following Hashimoto's thyroiditis whose MRI shown persistent symmetrical bilateral hypertension on DWI in the past two years. To our knowledge this is the first report of persistent symmetrical bilateral hypertension on DWI in a patient with Hashimoto's thyroiditis.

Keywords: DWI, Hashimoto's thyroiditis, Hashimoto's encephalopathy

Introduction

HE is characterized by encephalopathy and elevated anti-thyroid antibodies in the absence of a central nervous system infection, tumor or stroke [1]. The first patient diagnosed HE was an adult in 1966 [2]. It is a rare disorder with an estimated prevalence of 2/100,000 [3]. HE may present as an acute, subacute, or even chronic illness that is more common in women than men [4].

Many cases of HE have been reported since 1966. Neurological and psychiatric complications of HT include neuropathy, cerebellar dysfunction, encephalopathy, myxedema, coma, dementia, depression and psychosis [5]. Different diagnostic criteria have been proposed, the most accurate is that proposed by Castillo [6,7].

MRI reports on HE were limited, until now. Approximately 50% of MRI findings were normal, and the remaining manifested non-specific features, including ischemic-like changes, demyelination, vasogenic edema and atrophy [8]. To our knowledge the persistent symmetrical bilateral hypertension on DWI has not been reported.

Case Presentation

A 70-year-old women with a 5-year history of Hashimoto's thyroiditis presented with recurrent consciousness disturbance in the past 15 days. She also had a history of dizziness and gait instability for 3 years who took twice examinations of magnetic resonance imaging (MRI) in the past two years. She's medical history involved taking dextrothyroxine for the treatment of the Hashimoto's thyroiditis. But she stopped taking dextrothyroxine

in the past month. She received intranasal dextrothyroxine and intravenous use of corticosteroid. The next day her awareness restored to normal. Neurological examination revealed symmetric weakness of all 4 limbs and ataxic gait.

Laboratory testing showed decreased free triiodothyronine (3.12 pmol/l); elevated antithyroid peroxidase antibody (64.4IU/ml), thyroglobulin antibody (6.1 IU/ml) and thyroid stimulating hormone (15.049 uIU/ml);and decreased VB12 (63.00 pg/ml).

Head magnetic resonance imaging showed symmetrical bilateral hypertension on diffusion -weighted imaging (DWI) and T2-weighted imaging (Figure1). Compared with the two previous MRI in the past two years, we found the symmetrical bilateral hypertension on DWI exist persistently. T2-weighted MRI findings the lesion of the cerebellar peduncle presented as "mushroom cloud" changes (Figure 3).

Discussion

Persistent hypertension on DWI can present in Adult Leukodystrophies, adult-onset neuronal intranuclear inclusion disease (NIID) and CJD [8-11]. But it differs from the above diseases in our patient by the character of the DWI. We consider the likely of the Hashimoto encephalopathy in our patient due to the history of Hashimoto's thyroiditis, high levels of antithyroid peroxidase antibody and sensitive to cortisol. But the persistent symmetrical bilateral hypertension on DWI has not been reported in the Hashimoto encephalopathy.

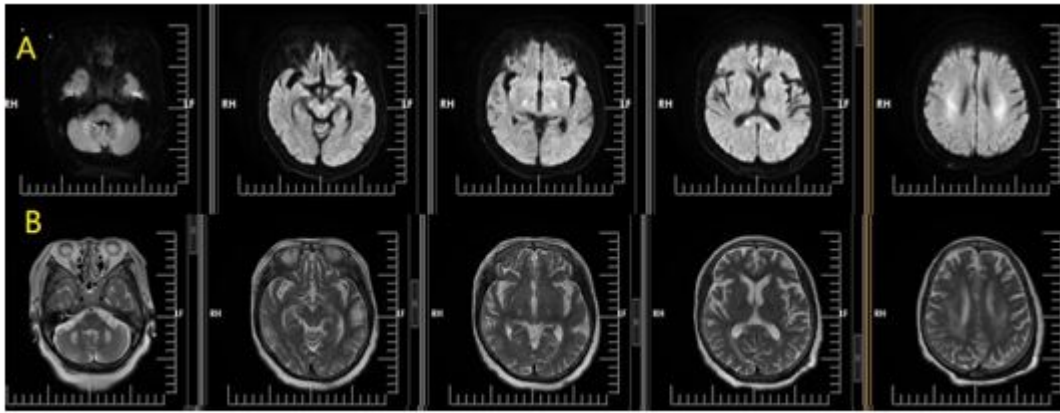


Figure 1: Magnetic resonance imaging (MRI) findings. A) Diffusion-weighted imaging MRI showed symmetrical bilateral lesion in the cerebellar peduncle, cerebral peduncle, posterior limbs of the internal capsules, corpus callosum and corona radiata. B) T2-weighted MRI showed hypertension in these lesions.

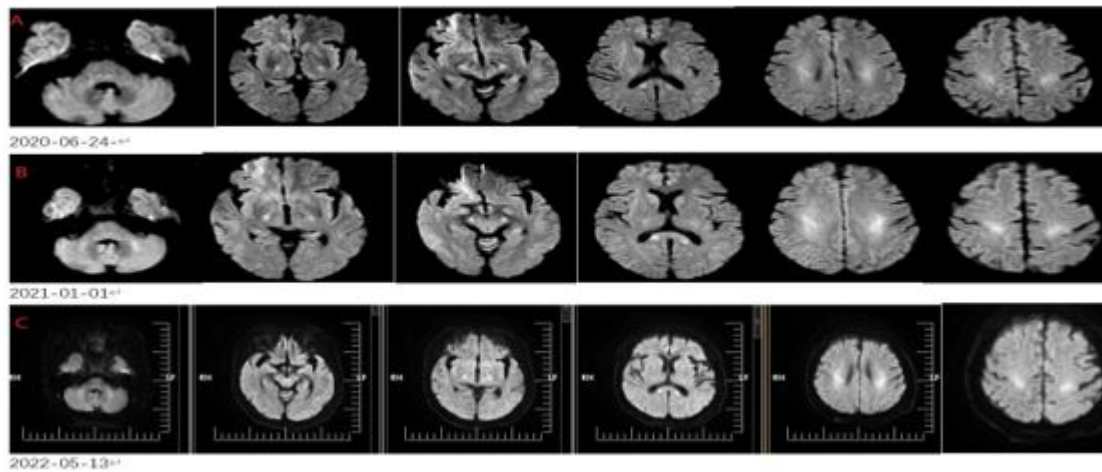


Figure 2: DWI findings in the past two years. A) Diffusion-weighted imaging MRI of June 24, 2020 showing symmetrical bilateral hypertension in the cerebral peduncle, posterior limbs of the internal capsules, corpus callosum, corona radiata and frontal lobes. B) Diffusion-weighted imaging MRI of January 1, 2021 showing the lesion above is still exist with additional of the cerebellar peduncle (outstanding in the left). C) Diffusion-weighted imaging MRI of May 13, 2022 showing it still exists, and the lesion in the cerebellar peduncle became symmetrical.

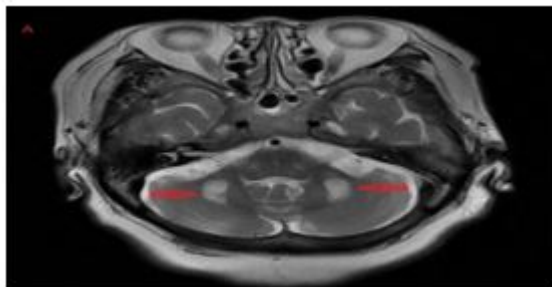


Figure 3: T2-weighted MRI findings of the cerebellar peduncle. T2-weighted MRI showed the lesion of the cerebellar peduncle presented as “mushroom cloud” changes.

Declarations

Ethics Approval and Consent to Participate

Informed consent was obtained from the patient to publish his case, and approval for this study was provided by the Research Ethics Committee of The Second Hospital of Liaocheng.

Consent for Publication

Written informed consent for publication of this Case Report was obtained from the patient.

Availability of Data and Materials

All data related to this case report are documented within this manuscript

Competing Interests

The authors declare that they have no competing interests.

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Authors' Contributions

ZSL and PXX contributed to the concept, drafting, and reporting of the case. PYH contributed to revision of the manuscript. All authors have read and approved the final manuscript.

Acknowledgment

Not applicable.

Competing Interest

The authors have no conflicts of interest to disclose

Contributions

Shu-lai Zhu: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data; Xin-xin Pan: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Yu-hua Peng: Drafting/revision of the manuscript for content, including medical writing for content;

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