Austin Journal of Clinical Neurology

Austin Publishing Group

Open Access Full Text Article

Case report

Neurosyphilis Exhibiting MRI Abnormalities Mimicking Limbic Encephalitis

Yuta Hagiwara*, Takahiro Shimizu, Naoya Kunika, Hisanao Akiyama and Yasuhiro Hasegawa

Department of Internal Medicine Division of Neurology , St. Marianna University School of Medicine, Japan

***Corresponding author:** Yuta Hagiwara, Department of Neurology, Division of Neurology, St. Marianna University School of Medicine, 2-16-1 Sugao, Miyamae, Kawasaki, Kanagawa 2168511, Japan, Tel: 80449778111; FAX: 81449768516; Email: y2hagiwara@marianna-u.ac.jp

Received: January 08, 2014; Accepted: January 17, 2014; Published: January 28, 2014

Introduction

Neurosyphilis is treatable with antibiotics. Therefore early diagnosis and treatment is important. Making the diagnosis of neurosyphilis is often difficult, because most patients of neurosyphilis present with various symptoms, such as dementia, personality change, confusion, headache, seizures, and visual disorder. We report a case of neurosyphilis was taken to our hospital because of generalized seizures, and revealed MRI abnormalities mimicking limbic encephalitis.

Case report

A 48-year-old man was brought to our hospital emergency room by ambulance because of generalized seizures. He did not have any previous history of seizures or epileptic attacks. Despite intravenous diazepam and a continuous infusion of phenytoin with a loading dose of 750 mg, the seizures continued. Lumber puncture was performed and moderately high cell count and protein were demonstrated, with normal glucose level: 32 cells/L, 55 mg/dL and 113 mg/dL, respectively. Magnetic resonance imaging (MRI) of the brain revealed a high intensity area in the left mesiotemporal lobe on diffusion-weighted images (DWI), T2-weighted images (T2WI) and fluid-attenuated inversion recovery (FLAIR) (Figure 1). We tentatively diagnosed status epilepticus caused by limbic encephalitis and empirically started acyclovir 1500 mg/day for 14 days. The seizures completely ceased within 6 hours after admission but dysmnesia and a psychomotor disturbance remained. A Herpes simplex PCR test of cerebrospinal fluid (CSF) on admission was reported as negative, but steroid pulse therapy was started based on the tentative diagnosis of non-herpetic acute limbic encephalitis. However, the follow-up laboratory tests demonstrated an elevation of the serum Treponema pallidum hemagglutination assay (TPHA) to 11800 U/ml. A serum test for antibodies against human immunodeficiency virus (HIV) was negative. Further CSF tests were positive for fluorescent treponemal antibody-absorption test (FTA-ABS) and TPHA. He was diagnosed with neurosyphilis and we obtained his past history of treatment for syphilis 20 years previously. After penicillin treatment (24 million unit IV per day for 14 days), the intensity of the initial lesion on the FLAIR images gradually decreased but remained on the follow-up images 35 days after admission, suggesting that this MRI abnormality was not caused by status epilepticus (Figure 1)[1].

Neurosyphilis is a slowly progressive, destructive infection of the brain and spinal cord. It can occur at any stage of syphilis, although symptomatic early neurosyphilis is a rare manifestation [2]. A patient with neurosyphilis exhibiting bilateral hyperintensity in the mesial temporal lobes on T2-weighted MR images was previously reported [3].

Although neurosyphilis is well known as a cause of dementia and dysmnesia, we should be aware of neurosyphilis showing MRI abnor-

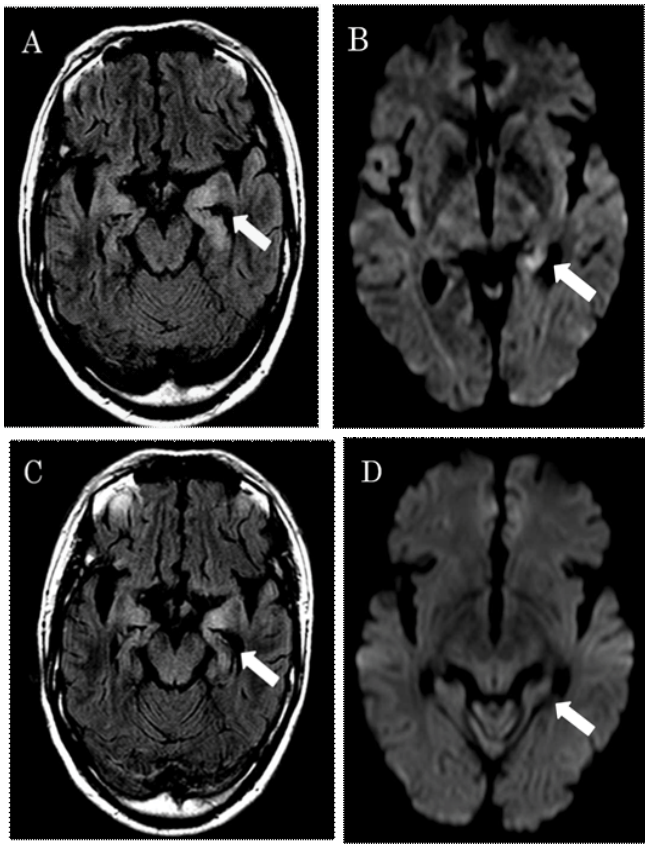

Figure 1: Follow-up MR images on admission and 35 days after admission. FLAIR images (A,C) and diffusion-weighted images (B,D) are shown. An area of high intensity is demonstrated in the left mesiotemporal lobe on diffusion-weighted (B) and FLAIR images (A) on admission. This lesion was also observed on FLAIR image (C) as a high intensity area 35 days after penicillin treatment. The high intensity of DWI disappeared (D).

Citation: Hagiwara Y, Shimizu T, Kunika N, Akiyama H, Hasegawa Y. Neurosyphilis Exhibiting MRI Abnormalities Mimicking Limbic Encephalitis. Austin Clin Neurol 2014;1(1): 1005.

malities mimicking limbic encephalitis in the setting of neurocritical care.

Keywords

Neurosyphilis; Limbic encephalitis; Generalized seizures; MRI

References

1. Szabo K, Poepel A, Pohlmann-Eden B, Hirsch J, Back T . Diffusion-weighted and perfusion MRI demonstrates parenchymal changes in complex partial status epilepticus. Brain. 2005; 128: 1369-1376.
2. Hama K, Ishiguchi H, Tuji T, Miwa H, Kondo T . Neurosyphilis with mesiotemporal magnetic resonance imaging abnormalities. Intern Med. 2008; 47: 1813-1817.
3. Bash S, Hathout GM, Cohen S . Mesiotemporal T2-weighted hyperintensity: neurosyphilis mimicking herpes encephalitis. AJNR Am J Neuroradiol. 2001; 22: 314-316.

Austin Clin Neurol - Volume 1 Issue 1 - 2014
ISSN : 2381-9154 | www.austinpublishinggroup.org

Citation: Hagiwara Y, Shimizu T, Kunika N, Akiyama H, Hasegawa Y. Neurosyphilis Exhibiting MRI Abnormalities Mimicking Limbic Encephalitis. Austin Clin Neurol 2014;1(1): 1005.