

Huge Brain Cystic Lesions Resulting from Metronidazole-Induced Encephalopathy

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Abstract

Metronidazole-induced encephalopathy (MIE) is a rare clinical condition resulting from long-term use of metronidazole. The symptoms and brain MRI changes in MIE usually resolve dramatically on discontinuation of treatment, and thus MIE with brain cystic lesions has rarely been reported. A 49-year-old woman was treated for a lumbar abscess with oral administration of 1.5 g/day of metronidazole for 4 months. Neurological examination revealed aphasia, apraxia, agraphia, cerebellar ataxia, and cognitive impairment. On brain MRI, diffusion-weighted imaging and the apparent diffusion coefficients were consistent with cytotoxic edema in the corpus callosum and subcortical white matter, representing delayed huge cystic lesions. Thus, we should be aware of MIE with irreversible brain lesions.

Keywords: Metronidazole; Encephalopathy; Cystic lesion

Image Description

Metronidazole-induced encephalopathy (MIE) is a rare clinical condition resulting from long-term use of metronidazole. The symptoms and brain MRI changes in MIE usually resolve dramatically on discontinuation of treatment, and thus MIE with brain cystic lesions has rarely been reported [1,2].

A 49-year-old woman was treated for a lumbar abscess with oral administration of 1.5 g/day of metronidazole for 4 months. Neurological examination revealed aphasia, apraxia, agraphia, cerebellar ataxia, and cognitive impairment.

On brain MRI, symmetrical hyperintense lesions were observed in the bilateral middle cerebellar peduncles (arrows in A, D and G), bilateral cerebellar dentate nuclei (arrowheads in A, D and G), genu of the corpus callosum (arrows in B and E), splenium of the corpus callosum (arrowheads in B and E), and subcortical white matter

(arrows in C and F) on FLAIR imaging, diffusion-weighted imaging (DWI), and apparent diffusion coefficient (ADC) mapping, before withdrawal. Low intensity lesions are observed in the genu of the corpus callosum (arrow in H) and subcortical white matter (arrows in I) on ADC maps, before withdrawal. Although follow-up MRI (1 month after withdrawal) of the cerebellum revealed the abnormal intensities in the middle cerebellar peduncles and cerebellar dentate nuclei had disappeared (J), huge cystic lesions were observed in the genu of the corpus callosum (arrow in K) and subcortical white matter (arrows in L), suggesting that cytotoxic edema had occurred. Thus, we should be aware of MIE with irreversible brain lesions.

References

1. Erdener SE, Kansu T, Arsava EM, Dericioglu N (2013) Brain MRI evolution of metronidazole intoxication. *Neurology* 19: 1816-1817.
2. Furukawa S, Yamamoto T, Sugiyama A, Ohira K, Aotsuka Y, et al. (2015) Metronidazole-induced encephalopathy with contrast enhancing lesions on MRI. *J Neurol Sci* 352: 129-131.

