Internal Medicine
The Japanese Society of Internal Medicine
doi: 10.2169/internalmedicine.0961-18
Intern Med 58: 621-622, 2019
http://internmed.jp

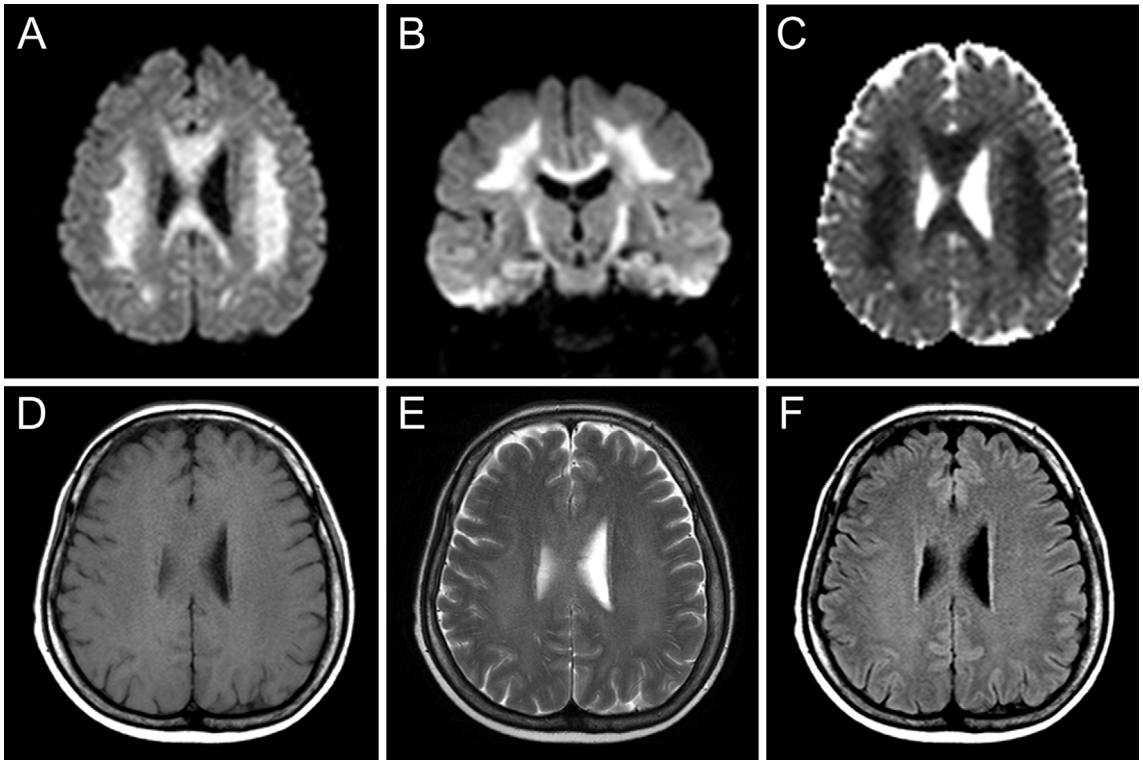
【 PICTURES IN CLINICAL MEDICINE 】

Capecitabine-induced Leukoencephalopathy

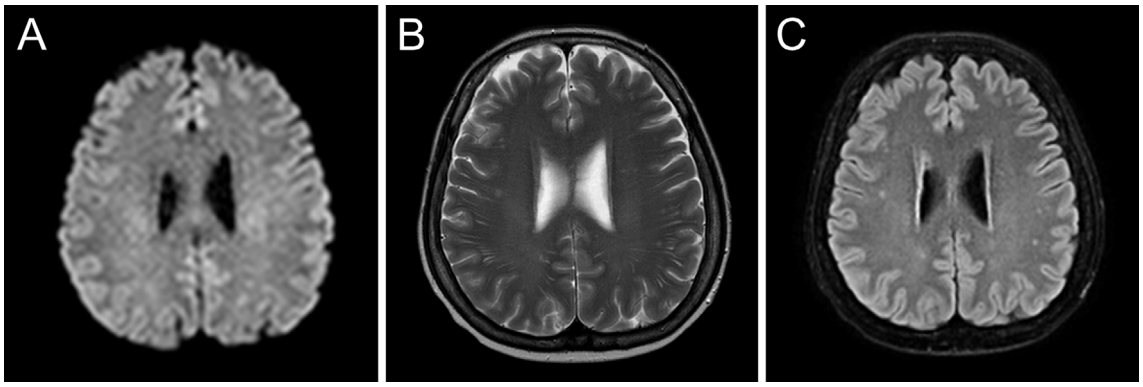
Kenji Yoshimura[1], Shinya Tokunaga[2], Haruko Daga[2] and Manabu Inoue[1]

Key words: capecitabine, 5-fluorouracil, leukoencephalopathy, toxic leukoencephalopathy, capecitabine-induced leukoencephalopathy

(Intern Med 58: 621-622, 2019)
(DOI: 10.2169/internalmedicine.0961-18)



Picture 1.



Picture 2.

[1]Department of Neurology, Osaka City General Hospital, Japan and [2]Department of Medical Oncology, Osaka City General Hospital, Japan
Received: February 4, 2018; Accepted: July 22, 2018; Advance Publication by J-STAGE: October 17, 2018
Correspondence to Dr. Kenji Yoshimura, yoshiken@kuhp.kyoto-u.ac.jp

A 51-year-old woman presented with acute-onset agitation and disturbance of consciousness. She had metastatic breast cancer and had been treated with capecitabine for one week prior to presentation. Brain magnetic resonance imaging (MRI) with diffusion-weighted imaging (DWI) revealed extensive leukoencephalopathy spreading along the bilateral pyramidal tracts and the corpus callosum [axial (Picture 1A) and coronal (Picture 1B)], which showed a low intensity on an apparent diffusion coefficient map (Picture 1C), although T1-weighted (Picture 1D), T2-weighted (Picture 1E) and fluid-attenuated inversion recovery (FLAIR) (Picture 1F) imaging showed only subtle changes. Her symptoms disappeared completely at one week after admission with the discontinuation of capecitabine, and brain MRI taken at that point showed no abnormalities on DWI (Picture 2A), T2-weighted imaging (Picture 2B) or FLAIR imaging (Picture 2C). Capecitabine is an oral prodrug of 5-fluorouracil and rarely causes leukoencephalopathy (1, 2). Broad symmetric restricted diffusion with relatively subtle T2/FLAIR changes is a characteristic finding (1), suggesting that capecitabine might induce cytotoxic edema by abnormal water shift from the extracellular to intracellular space. Since the discontinuation of capecitabine leads to a good clinical outcome by improving cytotoxic edema, clinicians should be aware of these imaging features to facilitate the early treatment of such patients.

The authors state that they have no Conflict of Interest (COI).

References

1. Videnovic A, Semenov I, Chua-Adajar R, et al. Capecitabine-induced multifocal leukoencephalopathy: a report of five cases. Neurology **65**: 1792-1794, 2005.

2. Obadia M, Leclercq D, Wasserman J, et al. Capecitabine-induced acute toxic leukoencephalopathy. Neurotoxicology **62**: 1-5, 2017.