Teaching NeuroImages: Radiographic evolution in an adult case of acute necrotizing encephalopathy

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Figure 1 Radiographic evolution on T1- and T2-weighted images

(A) Initial MRI shows hypointense T1 and T2 signals in the pons (A.a, A.b) and hypointense T1 and hyperintense T2 signals in the bilateral thalami (A.c, A.d), and demonstrates hemorrhagic necrosis. (B, C) Repeated MRI reveals a gradual reduction of the pontine (B.a and C.a: T1, B.b and C.b: T2) and thalamic lesions (B.c and C.c: T1, B.d and C.d: T2).

A healthy 37-year-old woman developed delirium and was comatose on admission after a 3-day history of chills, fever, and myalgias. Neuroimaging showed lesions affecting bilateral thalami and pons (figures 1 and 2) and normal venous sinuses. Laboratory tests detected elevated serum aminotransferases, increased CSF protein, and no specific virus (tables e-1–e-3, links.lww.com/WNL/A597). She gradually recovered consciousness in 4 days, maintained left-sided 1/5 plegia and slurred speech, and was discharged 28 days later (NIH Stroke Scale score 2).

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Figure 2 Image findings of apparent diffusion coefficient (ADC) and diffusion-weighted imaging (DWI) sequences

(A) At admission, ADC and DWI show target-like lesions and edema in the bilateral thalami. (B) Day 9, ADC and DWI reveal a regression of the lesions.

Acute necrotizing encephalopathy (ANE) occurs rarely in adult patients. The multifocal, symmetric brain lesions triggered by antecedent infections are the most distinctive features of ANE (figure e-1, [links.ww.com/WNL/A596](https://www.ww.com/WNL/A596)).^{1,2}

Author contributions

Wenzhao Liang: study concept and acquisition of data. Yan-kun Shao: acquisition of data and patient treatment. Yang Cui: acquisition of data. Shuai Wu: construction of figures. Feng Lu: construction of figures. Jinting He: acquisition of data. Yingying Wang: acquisition of data. Xiaobin Han: patient treatment. Jing Mang: study design and critical revision of the manuscript. Zhongxin Xu: acquisition of data.

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Disclosure

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