Teaching *NeuroImages*: Acute necrotizing encephalopathy during novel influenza A (H1N1) virus infection

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Figure MRI

Axial (A) and sagittal (B) T2-weighted MRI shows confluent hyperintensity involving the cortical-subcortical regions of the occipital and parietal lobes. There are also several small areas in internal and external capsula, insular cortex, and bilaterally in the thalamus and in the left superior cerebral peduncle (A, B). Axial diffusion-weighted image map shows restricted water diffusion in the corresponding areas mimicking acute ischemic infarction with cytotoxic edema. The lesions are not confined to a certain arterial territory (C). The spectroscopic study (echo time = 144 msec) shows high peaks for lactate (arrow), with normal values for choline, creatine, and NAA (D).

Since the outbreak of novel influenza A (H1N1) in 2009, various neurologic complications have been cited.¹ A 2-month-old girl died of a rapidly progressive encephalopathy after influenza infection. MRI, performed after 12 hours from the onset of symptoms, showed bilateral and symmetric lesions including the thalamus, the cortical-subcortical regions of the occipital and parietal lobes, and brainstem tegmentum (figure). The pathology of necrosis and vasculopathy were in keeping with acute necrotizing encephalopathy, first described in Japan and carrying high mortality and morbidity.² A vasculopathy with breakdown of the blood-brain barrier was incriminated but the pathogenesis remained obscure.

AUTHOR CONTRIBUTIONS

Dr. Spalice: drafting/revising the manuscript, study concept or design, acquisition of data. Dr. del Balzo: study concept or design, acquisition of data. Dr. Nicita: study concept or design, acquisition of data. Dr. Papetti: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, acquisition of data. Dr. Ursitti: study concept or design, study supervision. Dr. Salvatori: study concept or design, acquisition of data. Dr. Zicari: study concept or design, acquisition of data. Dr. Properzi: drafting/revising the manuscript, acquisition of data. Dr. Duse: study concept or design, acquisition of data.

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