analesdepediatría
www.analesdepediatria.org

IMAGES IN PAEDIATRICS

Acute necrotizing encephalopathy of childhood with adenovirus infection

Encefalopatía necrosante aguda de la infancia asociada a infección por adenovirus

Chih-Hao Wang[a], **Nan-Chang Chiu**[b,c,*]

[a] *Servicio de Pediatría, MacKay Children's Hospital, Taipéi, Taiwan*
[b] *Servicio de Pediatría, MacKay Memorial Hospital, Taipéi, Taiwan*
[c] *Departamento de Medicina, Facultad de Medicina, MacKay Medical University, Nueva Taipéi, Taiwan*

A boy aged two years and one month presented with several days of fever, vomiting, irritability, and progressive limb weakness. On arrival, he was drowsy (Glasgow Coma Score [GCS] E3 V3 M5) and hemodynamically stable. The laboratory tests were unremarkable, and a respiratory antigen test was positive for adenovirus. The non-contrast brain computed tomography (CT) showed bilateral symmetrical hypodensities in the basal ganglia (Fig. 1). The patient was admitted to the intensive care unit due to declining level of consciousness. The results of cerebrospinal fluid analysis were unremarkable, with negative bacterial and viral cultures. He received intravenous immunoglobulin, pulse steroids, mannitol, and supportive care. Magnetic resonance imaging (MRI) subsequently revealed symmetric diffusion restriction in the basal ganglia (Fig. 2), consistent with acute necrotizing encephalopathy of childhood. A metabolic workup ruled out inherited metabolic disorders. He was discharged in stable condition with residual emotional lability and impaired speech.

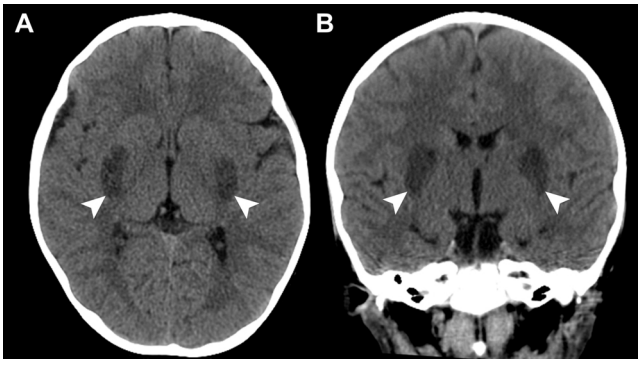

Figure 1 Axial (A) and coronal (B) non-contrast CT images showing symmetric bilateral basal ganglia hypodensities (arrowheads).

Acute necrotizing encephalopathy of childhood is a fulminant, infection-related encephalopathy with a high mortality and substantial long-term sequelae among survivors.[1] Symmetric basal ganglia and thalamic lesions are radiological hallmarks and are best visualized on CT and diffusion-weighted MRI.[2] Given the poor prognosis despite therapy, prompt recognition of these characteristic findings in the emergency care setting is essential to enable timely

DOI of original article:
https://doi.org/10.1016/j.anpedi.2026.504170
* Corresponding author.
E-mail address: ncc88@mmh.org.tw (N.-C. Chiu).

2341-2879/© 2026 Asociación Española de Pediatría. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

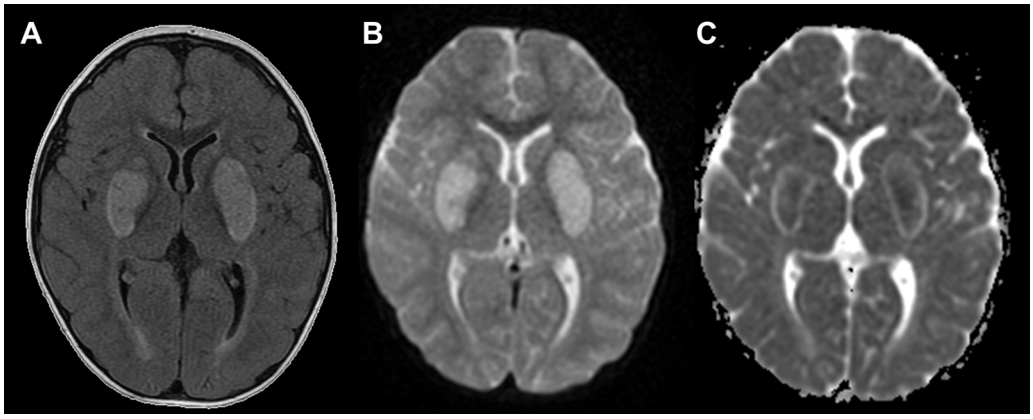

Figure 2 (A) Axial T2-weighted FLAIR image showing symmetric hyperintensities in the bilateral basal ganglia. (B) Diffusion-weighted imaging demonstrates restricted diffusion. (C) The corresponding apparent diffusion coefficient (ADC) map reveals a central hypointense core with a surrounding hyperintense rim, consistent with acute necrotizing encephalopathy of childhood.

intervention and maximize the probability of a favorable outcome.[3]

Institutional review board statement

This study was approved by the Ethics Committee of the MacKay Memorial Hospital, Taipei, Taiwan (approval No. 25MMHIS404e).

Funding

No external funding was received for this work.

Declaration of competing interest

The authors declare no potential conflicts of interest.

References

1. Zhu HM, Zhang SM, Yao C, Luo MQ, Ma HJ, Lei T, et al. The clinical and imaging characteristics associated with neurological sequelae of pediatric patients with acute necrotizing encephalopathy. Front Pediatr. 2021;9:655074, http://dx.doi.org/10.3389/fped.2021.655074.
2. Wong AM, Simon EM, Zimmerman RA, Wang HS, Toh CH, Ng SH. Acute necrotizing encephalopathy of childhood: correlation of MR findings and clinical outcome. AJNR Am J Neuroradiol. 2006;27:1919–23.
3. Williams TA, Brunsdon RK, Burton KLO, Drevensek S, Brady C, Dale RC, et al. Neuropsychological outcomes of childhood acute necrotizing encephalopathy. Brain Dev. 2019;41:894–900, http://dx.doi.org/10.1016/j.braindev.2019.07.007.