

IMAGES IN EMERGENCY MEDICINE

Neurology

Post-partum female who woke up with hemiparesisCharles R. Wira III MD¹ | Evie Marcolini MD² | Ketan R. Balsara MD, MBA³¹Yale Department of Emergency Medicine and Stroke Program, Yale School of Medicine, New Haven, Connecticut, USA²Department of Emergency Medicine, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, USA³Division of Neurosurgery, Department of Surgery, UConn Health, Farmington, Connecticut, USA**Correspondence**

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Email: charles.wira@yale.edu**1 | PATIENT PRESENTATION**

A previously healthy 30-year-old female (2-months post-partum) woke up with right-side hemiplegia and the inability to speak. She was last seen normal 8 hours prior by her husband before going to bed.

Initial National Institutes of Health Stroke-Scale Score (NIHSS) was 17. Acute brain imaging with magnetic resonance imaging (MRI) revealed restrictions of diffusion in the medial and posterior left middle cerebral artery (MCA) territory (core <70 cc) (Figure 1A) without corresponding fluid-attenuated inversion recovery (FLAIR) signal abnormalities

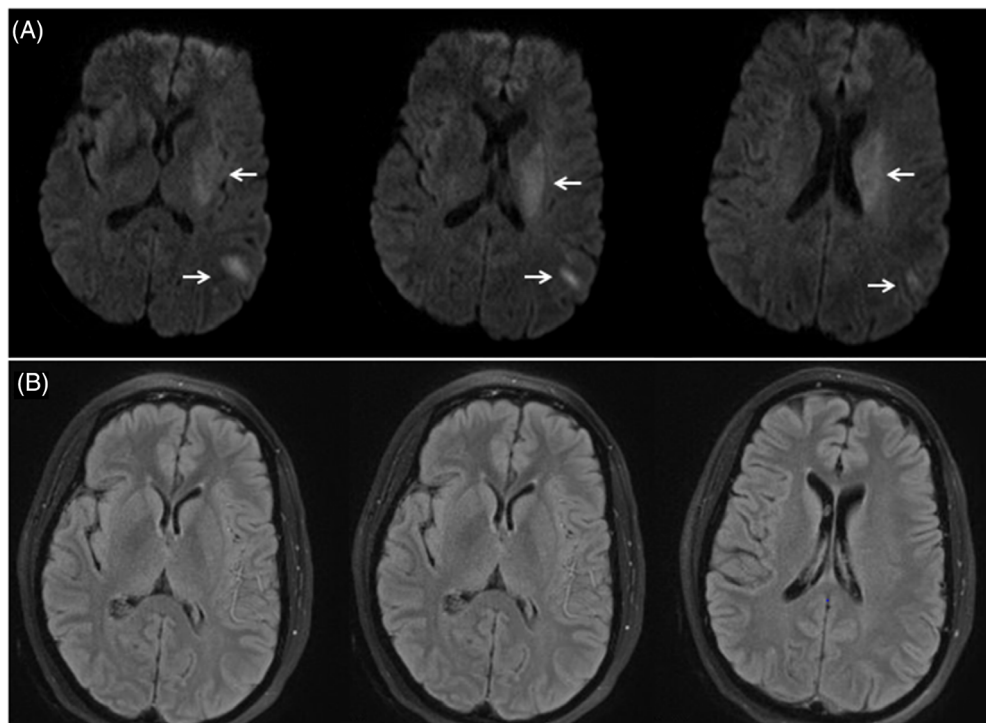


FIGURE 1 Diffusion/FLAIR mismatch. Panel A, Diffusion-Weighted Imaging (DWI) sequences with a restriction of diffusion (arrows show regions of early onset ischemia). Panel B, Fluid-Attenuated Inversion Recovery (FLAIR) sequences without any corresponding signal abnormalities.

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(Figure 1B). Acute vascular imaging revealed large vessel occlusions of the cervical/petrous segments of the left internal carotid artery and of the proximal left MCA.

2 | DIAGNOSIS

2.1 | Ischemic stroke with diffusion/FLAIR mismatch

The presence of a diffusion/FLAIR mismatch is indicative of stroke onset being less than 4.5 hours (Figure 1B).^{1,2} Previous preliminary wake-up stroke trials have used MRI to serve as the “witness” to when stroke onset begins and as an eligibility requirement for acute interventions (ie, thrombolysis).^{3,4} MRI also demonstrated a small core (<70 cc) with a large territory of uninfarcted MCA territory, consistent with patient selection for thrombectomy in the extended time window.⁵ In our case, the patient was taken directly to the neuro-cath lab for thrombectomy. Vessel flow was re-established. Two days later, speech and power were significantly improved (NIHSS 7), and 4 weeks later the patient had no deficits.

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