Teaching NeuroImages:

Confirmation of prenatal periventricular venous infarction with susceptibility-weighted MRI

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Parents of a healthy child with an unremarkable perinatal history noted a right-hand preference at 4 months and left hemiparesis by 6 months. MRI was not completed until 27 months (figure), confirming periventricular venous infarction (PVI). Stroke causes most term-born hemiplegic cerebral palsy (CP). Many are arterial ischemic strokes but PVI has emerged as a common and unique cause. Preterm, in utero germinal matrix hemorrhage results in medullary venous infarction.^{1,2} Of unique PVI imaging features, confirmation of this remote hemorrhage

provides the strongest evidence. Increased sensitivity of susceptibility-weighted imaging to detect this suggests it should be standard in CP imaging.

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Figure Periventricular venous infarction

Coronal T2 (A, inset) demonstrates a focal periventricular white matter lesion, sparing cortex and basal ganglia, with subependymal linear hypointensity (open arrow) and ex vacuo ventricular dilatation suggesting periventricular venous infarction (PVI). Gradient-echo T2*-weighted caudothalamic and subependymal hypointensities (B) are more evident on susceptibility-weighted imaging (C) due to blooming artifact.

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