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.

REFERENCES

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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