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Visual Diagnosis

A Rare Cause of Childhood Stroke

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This two-year-old girl was evaluated following a fall from a scooter footrest. Her physical examination revealed right upper motor neuron facial palsy and ipsilateral hemiplegia. Magnetic resonance imaging (MRI) revealed an acute infarction of the left gangliocapsular region (Fig, panel A). Computed tomography (CT) revealed bilateral basal ganglia calcifications and a hypodensity in the left gangliocapsular region (Fig, panel B). Coronal and sagittal reconstruction of the CT images revealed bilateral linear calcifications suggestive of mineralized lenticulostriate arteries (Fig, panels C and D). The girl was prescribed aspirin (2 mg/kg/day). Over the ensuing week, her strength improved.

The association of minor head trauma and acute ischemic stroke in infants has been reported.[1,2] Lingappa et al. published a comprehensive series describing this clinic-radiological entity.[1] There is no consensus on how the mineralization of the lenticulostriate arteries occurs. Some argue that the condition is a consequence of intrauterine infections,[3] hypoxic-ischemic encephalopathy,[4] or mutations of the platelet-derived growth factor receptor b gene.[5]

Basal ganglia stroke associated with mineralization of the lenticulostriate arteries is thought to result from mechanical forces causing brain displacement with ensuing stretching of rigid arteries, leading to arterial occlusion. The anatomic origin of the lenticulostriate arteries and the relatively unmyelinated brain may increase the risk of mechanical injury.[4]

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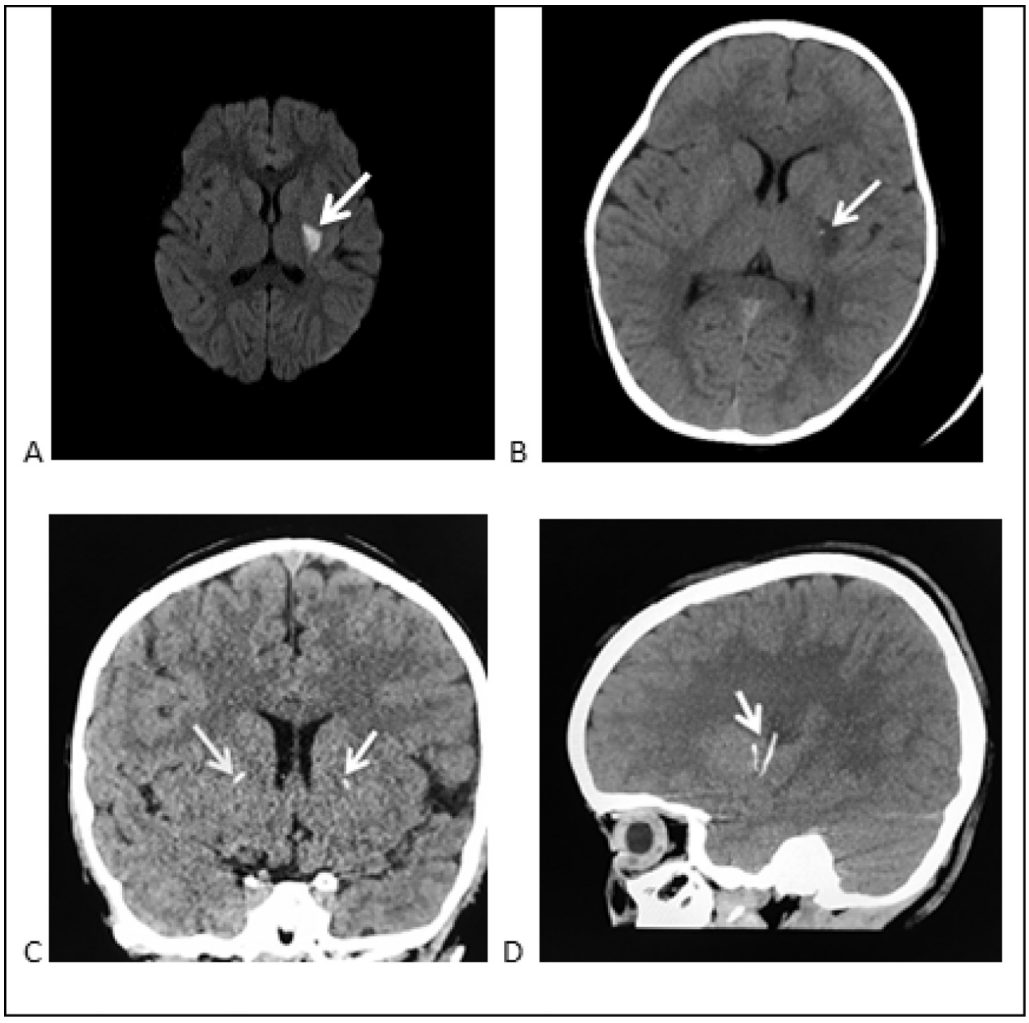

FIGURE. A) Diffusion-weighted MRI showing diffusion restriction in the left gangliocapsular region (arrow). (B) Axial CT image showing bilateral basal ganglia calcification and a hypodensity in left gangliocapsular region (arrow). (C) Reconstructed coronal CT image showing linear calcifications of lenticulostriate arteries (arrows). (D) Reconstructed sagittal CT image depicts linear calcifications of the left lenticulostriate arteries (arrow). CT, computed tomography; MRI, magnetic resonance imaging.