Hemorrhagic stroke in children: expect the unexpected

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Abstract

Background: Pediatric stroke is unexpectedly common, with an incidence in children between 28 days old and 18 years old of 2.3 to 13 per 100,000/year. Contrary to the adult population, in children, 45% of strokes are hemorrhagic and the most common cause is vascular anomalies. Albeit the incidence, median time to diagnosis is about 23 hours, impairing the prognosis.

Objectives: This work aims to alert the medical community about hemorrhagic stroke in children.

Methods: A review of our Neuroradiology database was performed for hemorrhagic stroke in children. Best imaging examples were selected.

Results: We present a pictorial review of different presentations and etiologies of hemorrhagic stroke on CT, MRI and angiography. A systematic imaging approach to diagnosis was performed. Cases to be shown include: arteriovenous malformations, aneurysms, cavernous malformations, sickle cell disease and coagulopathies such as: leukemia, anticoagulation treatment or hemophilia. In addition to this review, we also put in perspective the delay in diagnosis, opening discussion to what needs to be done to prevent it.

Conclusion: Hemorrhagic stroke is an important cause of morbidity in children. Doctors’ awareness and rapid neuroimaging are essential to a prompt diagnosis.