

A complex case of the role of rhinosinusitis in pediatric stroke

Taryn Hibshman^{1*}, David Garcia², Oscar Salichs¹, Nahush Bansal³

¹College of Medicine and Life Sciences, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

²Resident, Department of Pediatrics, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

³Resident, Division of Internal Medicine, Department of Medicine, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

Email: taryn.hibshman@rockets.utoledo.edu

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Introduction: Stroke in the pediatric population is a rare but important cause of morbidity and mortality in children with a variety of understudied etiologies.

Case Presentation: A 5 year old previously healthy female presented with acute right sided headache, weakness, facial droop, aphasia. A stroke alert was called with an NIH score of 9. A CT angiogram (CTA) carotid and CT brain showed moderate focal narrowing of the M1 segment of left middle cerebral artery (MCA). A respiratory panel revealed human metapneumovirus, and she was started on antibiotics and transferred to the pediatric intensive care unit (PICU) for monitoring. Initial management included aspirin as an anticoagulant, levetiracetam as seizure prophylaxis and methylprednisolone for anti-inflammation. An MRI showed acute infarct of the left basal ganglia without hemorrhage, as well as pansinusitis in the left maxillary, sphenoid and ethmoid sinuses along with a left upper molar signal hyperintensity. In searching for stroke etiology, an echocardiogram, lumbar puncture, EKG, full lab panel and video electroencephalogram were done but all resulted unremarkable. At the time, differentials included cardioembolism, vasospasm secondary to extension from pansinusitis, early moyamoya disease, arteriopathy from vasospasm or hematology pathology. The patient remained hemodynamically stable and her mobility increased with physical therapy. She was transferred to the floor after 8 days in the PICU. After a total of 15 days in hospital, the patient was discharged home in stable condition.

Conclusion: The rare MCA infarct that presented itself abruptly in this healthy child is likely secondary to vasospasm due to a viral infection. Thorough hemorrhagic, thrombotic, hematologic and autoimmune workups were all negative. The patient still follows with neurology for right sided weakness but has had no events since.

Keywords: Pediatric Stroke, Moya Moya, Infectious Disease, Stroke, Vasospasm, Sinusitis, Human Metapneumovirus, HHV6