Cerebral Venous Thrombosis in a Patient with Adenovirus

Disclosure: The authors did not report any financial relationships or conflicts of interest

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A 20-year-old African American male with history of obesity presented to the ED with a gradual onset, constant left temporal headache that started three days earlier while at work. The headache was described as pounding in nature and was associated with blurry vision, nausea and one episode of non-bloody emesis. He tried ibuprofen 400 mg BID with minimal relief. He denied fever, chills, vision loss, cough, dyspnea, chest pain, abdominal pain, joint pain or swelling, changes in bowel or bladder habits, weakness, sensory deficits, speech problems or confusion. He denied recent vaccination including the COVID vaccine. He denied recent illnesses, travel or trauma. In the ED, BP = 150/98 mm Hg, pulse = 84 bpm and BMI = 41.69 kg/m2. Neurologic exam was normal. Fundoscopic eye exam was not performed. CMP was within normal limits. No imaging was ordered. He was treated with IV Ketorolac, Metoclopramide, Diphenhydramine, and Dexamethasone. The headache resolved and the patient was discharged home with outpatient neurology follow up in stable condition. His headache returned 48 hours later and gradually worsened in intensity throughout the day. He returned to the ED for further evaluation. Significant labs included: WBC = 13.60 and respiratory PCR was positive for Adenovirus. CT of the head showed increased density in the left transverse sinus. CT venogram and MRI brain confirmed a dural venous sinus thrombosis in the left transverse and sigmoid sinuses. He had a negative hypercoagulable workup. There was no family history of hypercoagulability or malignancy. He was started on a heparin drip and transitioned to coumadin with outpatient follow up. Given the patient's negative hypercoagulable workup and absence of significant family history or inherited risk factors, we believe the patient had an acquired Adenovirus-induced cerebral vein thrombosis, activating platelets and inducing platelet-leukocyte aggregate formation.

Learning Objectives:

- Identify viral infection as a risk factor for cerebral venous thrombosis in patients without other predisposing risk factors.
- Recognize the importance of urgent neuroimaging in the setting of worsening headache.
- Recognize the importance of a comprehensive physical exam given the highly variable clinical presentation of cerebral venous thrombosis.