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Dazed and Confused: A Complex Migraine Variant

David Parkes
Rowan University

Christopher Schwartz
Jefferson Health NJ - Stratford

Alan Lucerna
Rowan University

James Espinosa
Rowan University

Bhumi Shah
Rowan University

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David Parkes, DO, Christopher Schwartz DO, Alan Lucerna DO, James Espinosa MD, Bhumi Shah DO

Emergency Medicine Residency and Department of Emergency Medicine, Rowan University, SOM

Abstract:

While most migraine headaches are benign, easily treatable, and able to be discharged home, there is a small percentage that blur the lines and raise concern for neurological compromise. We describe one such rare case of a 26-year-old male with no known history of migraine that presented to the emergency department with acute onset obtundation, confusion, aphasia, and weakness. Labs and imaging of the patient were grossly unremarkable. Treatment with a migraine cocktail and valproate led to full recovery within 24 hours of initial presentation. Infrequently, complex migraines can present with significant and concerning mental status changes. Early imaging, neurologic evaluation, and pharmacological intervention are helpful to symptom management, improved condition, and shorter hospital stays.

Introduction:

Acute primary headache, best defined as a headache not caused by or attributed to another disorder, constitute approximately 2-4% of all emergency department visits annually [1]. 90% of these headaches are considered migraine, tension, or cluster [2]. Migraine headaches in particular are responsible for, on average, 1.2 million emergency department visits in the United States annually [3]. Complex migraine, also known as “migraine with aura” typically refers to severe headache accompanied by reversible neurological symptoms [4]. This type of migraine variant encompasses close to 30% of migraine headache emergency department visits. Symptoms may include visual disturbances, nausea, photophobia, sonophobia, numbness, speech changes, and weakness among others and can last anywhere from minutes to days.

Case Presentation:

A 26-year-old male with a past medical history of cervical spine injury in 8th grade presents to the emergency department via EMS with somnolence, disorientation, delirium, headache, aphasia, generalized weakness, whole body numbness, insomnia, nausea, vomiting, and diarrhea. Per EMS, the patient’s girlfriend called 911 due to the patient experiencing a sudden change in mental status upon waking up that morning. The patient’s girlfriend further noted that as far as she knew nothing like this had ever occurred before. On presentation, the patient was lying in bed unable to stay awake and requiring constant sternal rubbing to elicit any verbal response. When a response was given, it was only non-sensical words and/or phrases.

Case Presentation continued:

He was noted to be moving all his extremities equally when sufficiently stimulated. Vital signs: blood pressure 124/65 mmHg, heart rate 103 bpm, respiratory rate 18 bpm, pulse oximetry 98% on room air, temperature 98.4 F. Review of systems was limited due to mental status change; however, the patient was oriented to person and was persistently able to inform staff of a severe headache. Physical exam revealed an otherwise healthy appearing Hispanic male with a body mass index of 21.5. The patient’s girlfriend said that he did not smoke or use drugs, however, he did drink alcohol socially. Lab work was remarkable for a hemoglobin of 17 g/dL, WBC 12.4 B/L, total bilirubin of 1.6 with direct of 0.2 mg/dL, elevated serum protein at 8.6 mg/dL, elevated urine pH (>9.0), elevated creatinine 1.30 mg/dL (baseline unknown), elevated urine protein (1+), elevated urine ketones (3+), and elevated urobilinogen (1+). A CT head without contrast, 1 view AP chest x-ray, EKG, and urine drug screen were unremarkable. Due to the patient’s initial presentation, he was first treated with 2 mg IV narcan and ammonia 15% inhalant smelling salt, which only slightly improved his level of alertness. On full re-evaluation around 2 hours after arrival, the patient was notably more conversational and less obtunded but remained somnolent and very confused. Hence, in conversation with neurology, the decision was made to perform a lumbar puncture in the face of persistent somnolence and confusion. LP results were unremarkable. The patient was then admitted to the hospital for MRI brain/cervical spine and further neurological evaluation. The following day, after evaluating the patient and his imaging, it was proposed by neurology that the patient had likely been suffering from a complex migraine. MRI brain and cervical spine were unremarkable for any acute pathology. He was treated with Reglan 5 mg IV, Decadron 10 mg IV, Benadryl 50 mg IV, Depakote 1 g IV, Tylenol 650 mg PO, Thiamine 100 mg PO, Ativan 1 mg IV, Zofran 4 mg IV, and 1L NSS. His symptoms fully resolved and he was discharged home with plans for close neurological follow up

Discussion:

Primary migraine headache presentations in the emergency department patient can vary greatly depending on the patient and his or her history. Most reassuring are patients with a strong migraine history that can easily describe the quality of their typical headaches and sometimes even the medications that best help alleviate their symptoms. More concerning patients are those with no previous history that describe headache red flags in their present illness.

Discussion continued:

Easily the most concerning and broadened differentials belong to those who are unable to describe or characterize their symptoms due to profound neurological deficits or a change in mental status. In the case of stroke versus migraine, overlapping symptoms may include but are not limited to disorientation, visual changes, vertigo, and generalized malaise. However, for the busy emergency department provider there are subtle distinctions that may help provide some early differentiation for stroke rule out and perhaps even reassurance in an unclear presentation.

The unequivocally most useful initial test in any such patient is the CT brain without contrast study to evaluate for acute hemorrhage or completed stroke. If negative and lab work including a urine drug screen are unremarkable then consideration towards lumbar puncture should be given. If results still remain inconclusive or vague, then admission for MRI and neurology evaluation should be considered in addition to symptomatic migraine treatment.

Conclusions:

We describe the case of a complex migraine presenting as sudden onset obtundation, confusion, expressive aphasia, global weakness, and nausea in an otherwise healthy 26-year-old male presenting to the emergency department. The patient had no known past history of headache and achieved full return to neurological baseline within 24 hours of symptom onset after migraine treatment. Headache and more specifically Migraine is a common presentation seen in the emergency department. Clinical gestalt given subtle differentiations in mimicking conditions in combination with reassuring imaging and lab work can help rule out more concerning disease processes and help make the diagnosis. Consideration for early neurology involvement and headache treatment can shorten symptom length and therefore, overall hospital course.

References:

“Definition of Terms.” ICHD, 2021 International Headache Society, 17 June 2019, ichd-3.org/definition-of-terms/.

“Evaluation of the Adult with Nontraumatic Headache in the Emergency Department.” UpToDate, www.uptodate.com/contents/evaluation-of-the-adult-with-nontraumatic-headache-in-the-emergency-department#:~:text=%7C%20This%20topic%20last%20updated%3A%20Jul,percent%20%5B1%2D3%5D.

“Migraine with Aura.” Mayo Clinic, Mayo Foundation for Medical Education and Research, 30 May 2019, www.mayoclinic.org/diseases-conditions/migraine-with-aura/symptoms-causes/syc-20352072#:~:text=Migraine%20aura%20symptoms%20include%20temporary,lasts%20less%20than%2060%20minutes.

“Complex Migraine.” Mayo Clinic, Mayo Foundation for Medical Education and Research, newsnetwork.mayoclinic.org/discussion/complex-migraine/.

“Migraine vs. Stroke: How To Tell The Difference.” WebMD, WebMD, www.webmd.com/migraines-headaches/migraine-and-stroke.

“Migraine through the Years: Migraines in Adulthood and Middle Age.” TheraSpecs, www.theraspecs.com/blog/migraine-in-adults-middle-age/.

Team, the Healthline Editorial. “Stroke Symptoms: Using the FAST Method and More.” Healthline, Healthline Media, 16 Oct. 2019, www.healthline.com/health/stroke/symptoms#risk-factors.