A prolonged presentation of cyclic vomiting syndrome in an adult

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Introduction: Intractable nausea and vomiting are symptoms commonly encountered in the clinical setting. Patients often experience weight loss, nutritional and electrolyte abnormalities, and emotional stress due to inability to eat, work, or socialize. Cyclic vomiting syndrome (CVS) is defined as recurrent episodes of intense nausea and vomiting episodes that can last anywhere from hours or days. It is a diagnosis by exclusion and there is often a negative workup for infectious or functional causes. Most commonly, it is diagnosed in children but occasionally can manifest in the adult population.

Case Summary: A 44-year-old African American male presented with intractable nausea and vomiting and 42 lbs weight loss for several months. Past medical history included GERD, DVT, AVMs and Morbid Obesity. Patient denied use of marijuana and family history included hypertension, diabetes, and migraines. Initial labs showed hypernatremic at 149, hypokalemic at 3.1, chloride at 107, bicarb at 29. Patient was complaining of dizziness and vertigo accompanying the nausea and vomiting. Patient initially improved following intubation for MRV Brain but returned a few days later. A diagnosis of neuromyelitis optica (NMO) was investigated and the patient was given five days of high dose steroids. However, aquaporin 4 antibody titers were negative and an MRI cervical spine/orbits did not show any signs of NMO. GI workup revealed no obstruction seen on CT enterography and EGD showed grade D esophagitis with erythematous gastric mucosa. No improvement was seen with PPI therapy and primary differential diagnosis was assumed to be intractable nausea and vomiting due to cyclic vomiting syndrome. The patient was started on 25 mg amitriptyline daily which was titrated up to 75 mg daily over a few weeks. With the increasing dose, the patient's nausea and vomiting began to improve and was able to tolerate food by mouth. Patient was discharged after 6 weeks in the hospital with plans for GI follow-up.

Discussion: Cyclic vomiting syndrome is most commonly a pediatric disorder but can occasionally manifest in adults. The cause of CVS is somewhat unknown but is considered to be related to migraines. Other causes have been found to be related to cannabis use, excessive hypothalamic-pituitary-adrenal axis activation, autonomic dysfunction, and mitochondrial DNA mutations (1). Multiple case reports of CVS in adults suggest patients typically have a family history of migraines and episodes begin in early adulthood. Episodes are often triggered by infections, stress, sleep deprivation, menstrual cycles, food allergies, or cannabis use (2). CVS has been described as commonly having four phases: interepisodic,

prodromal, emetic, and recovery. During the interepisodic phase the patient is often symptom free for weeks to months. The prodromal phase is categorized by the patient sensing the start of an episode. Similar to a migraine aura, symptoms during this period include nausea, sweating, abdominal pain, temperature intolerance, food aversion, and irritability. Once an episode begins patients experience the extreme nausea and vomiting that can last from days to weeks. Finally, during the recovery phase, the patient's nausea diminishes as this slowly increases their tolerance for oral intake (3). While it is often a diagnosis of exclusion, there are several diagnostic criteria that can be used to consider the diagnosis such as the Rome IV Criteria which includes 1) stereotypical episodes of vomiting that have an acute onset and a set duration, 2) three or more episodes within a year, and 3) absence of vomiting between episodes. The presence of all three criteria supports the diagnosis of CVS. Management of CVS is typically either prophylactic, abortive and/or supportive (4). Due to the hypothesis of the etiology being related to migraines, standard prophylactic treatment is low-dose amitriptyline. Other studies have shown that topiramate, cyproheptadine, propranolol and erythromycin can also be used as alternative prophylactic treatment (5,6). Supportive medication during an episode is typically intravenous fluids and anti-nausea medications like ondansetron or prochlorperazine. Sumatriptan has been shown to be effective as an abortive agent that can be used during the prodromal phase or during an acute episode (7). Cyclic vomiting syndrome is a minimally understood disorder especially in the adult population and more studies and research are needed to understand the etiology and presentation to hopefully one day minimize the impact on a patient’s health and lives.

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