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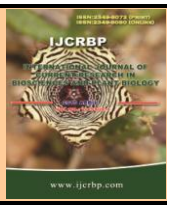

Case Study

Cyclic Vomiting Syndrome: Still a Challenge to Clinicians

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Abstract

Cyclic vomiting syndrome (CVS), a rare condition described as continuous cycles of intractable vomiting followed by symptom-free periods has been well recognized in children. However, the awareness of CVS in an adult needs to improve by clinician to avoid unnecessary surgeries or invasive diagnostic procedures, and provide prompt psychological intervention. Here, we report one adult-onset CVS who was initially misdiagnosed. After multiple abdominal surgeries and endoscopy/colonscopy, he was diagnosed with this syndrome and improved with psychological intervention. The patient started to follow up with psychiatrist on a regular basis for the major depression, treated with oral antidepressant (amitriptyline 200 mg daily, po) and psychological therapy, and his CVS symptom flared up every time when we tried to wean off the narcotics treatment. In conclusion, increased awareness of the condition and a high index of suspicion may help decrease delay in diagnosis after symptom onset. Psychiatric conditions should be considered in the treatment and narcotics are not recommended in the long-term treatment.

Keywords

Cyclic vomiting syndrome

Depression

Psychological intervention

Introduction

Cyclic vomiting syndrome (CVS) is a rare condition described as continuous cycles of intractable vomiting followed by symptom-free periods. It has been well recognized in children by pediatricians. However, although sporadic adult cases have been reported, the awareness of CVS in an adult needs to improve by clinician to avoid unnecessary surgeries or invasive diagnostic procedures, and provide prompt psychological intervention. We report one adult-onset CVS. The patient was initially misdiagnosed. After multiple abdominal surgeries and endoscopy/ colonscopy he was diagnosed with this syndrome and improved with psychological intervention.

Case Presentation

A 21-year-old male presented to the Emergency Department with a 10-day history of intractable vomiting and persistent cramping-like abdominal pain. He was not able to eat or drink and lost 10 lbs in last 10 days. His past medical history was significant for

three years of depression. On physical examination, he looked dehydrated with blood pressure 114/ 67 mmHg, hear rate 100/min, respiratory rate 16/ min, temperature 99.0 F. Body mass index (BMI) was 19. The abdomen was soft with slight and diffuse tenderness. He was initially treated as acute gastritis with aggressive intravenous normal saline and antiemetic. His symptom improved in a day and he was discharged home being symptom free.

Since then, in the next two years, this patient has had almost monthly admissions to the hospital with similar symptom, intractable vomiting and diffuse abdominal pain which usually resolves with antiemetic and intravenous fluid. He has been referred to multiple gastroenterologists. He was suspected in different admission to have pancreatitis, Crohn's disease, celiac disease, which had been ruled out by the normal results of multiple abdominal CT scan, endoscopes, capsule endoscopies, and colonoscopies. He even had cholecystectomy for possible cholelithiasis and cholecystitis, and after that he had another exploratory laparotomy which ruled out the small bowel obstruction.

The patient had persistent recurrence of the symptoms despite the narcotics (Oxycodone 30 mg po every 6 hours) and surgical interventions. Finally, patient was diagnosed CVS which is triggered by psychological stress and he started to follow up with psychiatrist on a regular basis for the major depression, treated with oral antidepressant (amitriptyline 200 mg daily, po) and psychological therapy. The frequency of his symptom flare-up such as nausea, vomiting and abdominal pain is one to twice a year. At the same time, he developed narcotics dependence two years after he received Oxycodone for his abdominal pain. His CVS symptom flared up every time when we tried to wean off the narcotics treatment.

Discussion

CVS was first described in the late 1800's as predominately present in the pediatric population. The criteria to diagnosis this condition is better known as Rome III classification of nausea and vomiting. The conditions are the following: stereotypical episodes of vomiting regarding onset and duration (< 1 week), three or more discrete episodes in the previous year, absence of nausea and vomiting between episodes (Talley, 2007).

The symptomatology in the pediatric population and adult population are very similar. The only difference is that pediatric-onset CVS is more commonly found in females with neurological disorders (Kumar et al., 2012). This leaves a puzzling question—why is it more difficult to diagnose an adult with CVS? It was found that adult patients remained undiagnosed with the condition from 8- 21 years from the onset of the disease (Abell et al., 2008). Patients are often diagnosed as having gastroenteritis or gastroparesis and sometimes have unnecessary surgeries—the most common one being cholecystectomy (Venkatesan et al., 2010).

Although the pathopsychiology of the condition is not well understood, it was well documented that the mitochondria plays a major role in the manifestation of the disease. Recent research shows the energy depletion from the mitochondrial mutations plays a large role in the predisposition of nausea (Yanag, 2010). Other theories include: brain-gut disorder, motility disorder, and autonomic disorder.

The diagnosis of CVS remains a challenge to clinician. The diagnosis of CVS is primarily based on history and clinical presentation, requiring the exclusion of other disorders associated with recurrent vomiting. Due to the frequent misdiagnosis of CVS, the patient can be exposed to many unnecessary diagnostic tests and delayed in appropriate treatment like our patient in this case. Cooper *et al.* recommended gastric emptying as a diagnostic test for CVS because CVS patients always have either rapid or normal GE in 30-case study (Cooper et al., 2014).

Although there is no cure for the condition, there have been many promising prophylactic therapies that have been affective. Mirtazapine, a second-generation antidepressant, has shown great improvement in a large number of patients. The neurotransmitters largely responsible for causing nausea and vomiting symptoms include serotonin and dopamine (Coskun and Alyanak, 2011). Since the mechanism of action of Mirtzapine is considered to act as an antagonist of the serotonin receptors, it shown is help with the treatment of CVS. Although

this treatment option is very promising, it is not effective 13% of patients (Hejazi and McCallum, 2014). Others studies have that Chlorpromazine has helped in patients with resistant CVS. Since Chlorpromazine acts on the dopamine receptors, it may be considered a good option for CVS (Ozdemir et al., 2014). A recent article suggests many conditions like migraines and psychiatric conditions may hinder in the treatment of CVS (Hejazi et al., 2010).

CVS is associated with multiple psychological conditions. Namin et al. (2007) reported that CVS population has high prevalence of anxiety or depression. Therefore, the prompt and periodical psychiatric support from consulting program may play a role in the long-term treatment. In our case, the patient's frequency of CVS became less, from monthly to once six month, after initiating the psychological medication and counseling support.

Narcotics have been generally used in emergency medicine for the acute relapsing in CVS patients. However, Drossman et al. (2012) found that even the narcotics work successfully in some individuals, in long-term, it causes narcotics or substance abuse and a high relapse rate in a substantial number of CVS patients. Sheyas et al. (2014) reported that continued use of opioid therapy was a poor prognostic marker of cyclical vomiting syndrome and may contribute to disease coalescence, with dependence and withdrawal triggering recurrent episodes. In our case, the patient has been on narcotics for his acute symptoms. However, he developed narcotics dependency and therefore he had more frequent relapsing despite the TCA treatment and periodic psychiatric support.

Conclusion

Although CVS is increasingly recognized in adults, it remains a challenge to clinicians to make a prompt diagnosis and provide efficient treatment. Increased awareness of the condition and a high index of suspicion may help decrease delay in diagnosis after symptom onset. Psychiatric conditions should be considered in the treatment and narcotics are not recommended in the long-term treatment.

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