



Case Report

Case report: A case of undiagnosed cannabinoid hyperemesis syndrome in rural part of Nepal



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ABSTRACT

Introduction: and importance: Cannabinoid, a widely used recreational drug worldwide. In Nepal, it is found easily and has multiple uses as well as misused as a psychoactive substance. Despite having anti emetic property of Marijuana, chronic use of the substance can lead to cyclic vomiting syndrome due to effect in central nervous system and gastrointestinal system.

Case: we present a case of 28 year old man presented frequently with severe vomiting and abdominal pain which improved with hot showers and stopping use of cannabinoid.

Clinical findings and investigation: Patient abdomen was tender but all other physical examinations were within normal limits. His lab investigations were within normal limit except of Total leukocyte count and urine analysis.

Intervention and outcome: The patient was hospitalized and treated for dehydration, nausea and vomiting, and abdominal pain. The patient was diagnosed with cannabinoid hyperemesis syndrome and was discharged from the hospital two days later with the advice to stop using cannabis completely.

1. Introduction

1.1. Background and rationale

Cannabis is the most widely used recreational substance worldwide. Marijuana is currently legal in some states for medicinal uses, while some states have legalized it for recreational use [1]. In Nepal, ethno-medicine has been practiced for generations and cannabis has been utilized in isolated tribes to treat diarrhea, constipation, and snake bites. In the hills, cannabis was commonly utilized as cow fodder and fiber (hemp), while a few people used it as psychoactive agents. After alcohol and cigarettes, illicit substances such as opiates and cannabis are very common in Nepal. According to a 2012 Ministry of Home Affairs survey, 90.5% of 91,534 'hard drug' users in Nepal used cannabis, with 74.1% mixing cannabis with 'tranquilizer.' [2]. As the usage of cannabis has grown, a new clinical disorder called as Cannabinoid Hyperemesis

syndrome has emerged. Chronic cannabis usage, cyclic episodes of nausea and vomiting, and frequent hot baths are all symptoms of Cannabinoid Hyperemesis Syndrome. The cause of Cannabinoid Hyperemesis Syndrome is uncertain. Despite marijuana's well-known anti-emetic qualities, there is mounting evidence of its puzzling effects on the gastrointestinal tract and the central nervous system [3].

Guidelines: SCARE 2020 paper [9].

This case report has been reported in line with the SCARE Criteria.

2. Case presentation

2.1. Patient information: demographics and presentation

A 28-year-old man from the rural part of Nepal presented five times to the Emergency Room (ER) with severe vomiting accompanied by severe abdominal pain and extreme nausea during a 2 year period from

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2020 to 2022.

The patient complained of frequent episodes of vomiting (>10 times per day) for several days, acute nausea, and diffuse colicky, nonradiating abdominal discomfort throughout each visit. During this time, the patient was unable to take liquids or meals due to nausea and vomiting. Each episode ran between 24 and 48 hours. Daily hot showers lasting 30–60 minutes, 4–5 times a day were reported to be helpful. The patient had no chronic medical condition nor had been taking any medicine. The patient denied any drug allergies or sensitivities.

Fever, chills, weakness, headache, dysphagia, heartburn, flatulence, bloating, constipation, and diarrhea were all denied by the patient.

Past history: There is history of similar episodes of illness five times in 2 year period.

2.2. Drug and allergy history

No h/o of long term medication and no h/o of documented allergies till date.

2.3. Family history

He denied history of similar illness in family as well.

2.4. Social history

His social background revealed a long history of daily cannabis usage (>8years), social alcohol use, and daily caffeine consumption. He claimed to have used a wide range of cannabinoid sticks (ranging from 1 to 10 in a typical Surya cigarette), a variety of products (mostly leaves and flowers, but occasionally black or purple haze), and either single or mixed with smoke or alcohol. He has denied using other substances in the past.

2.5. Clinical findings

The patient appeared apprehensive at this visit, with normal vital signs and no fever or chills. Except for slight abdominal tenderness when palpated, the physical examination was unremarkable. The neurological evaluation revealed no evidence of a focal deficiency.

2.6. Diagnostics assessment and interpretation

Previous abdominal and pelvic CT scans were unremarkable, according to the patient's visit records from the previous year. Complete blood count, basic metabolic panel, glucose, troponin, lactic acid, and pancreatic and hepatic enzymes were all normal in previous blood tests. Previous radiological and electrical tests, such as a chest x-ray and an electrocardiogram, had all come back normal. The previous urinalysis was normal, but the urine drug screen for cannabis was positive. For the indication of nausea and vomiting, an outpatient upper endoscopy was conducted. The testing revealed that the stomach mucosa was normal.

During this visit except for a mild leukocytosis of 12,200/mm³, blood tests were normal, including a complete blood count, basic metabolic panel, glucose, and pancreatic and liver enzymes. A CT scan of the abdomen revealed nothing unusual. Cannabinoids were detected in the urine, but there was no evidence of alcohol in the blood. Urinalysis revealed nil.

2.7. Intervention

The patient was hospitalized and treated for dehydration, nausea and vomiting, and abdominal pain. The patient was diagnosed with CHS and was discharged from the hospital two days later with the advice to stop using cannabis completely. Cannabis cessation support was also provided through education and resources.

2.8. Outcome and follow up

Following discharge, the patient abstained from cannabis use for around 3 months. The patient's vitals are normal, and the CHS symptoms have gone away with no recurrence.

3. Discussion

Cannabinoid hyperemesis syndrome (CHS) is the condition characterized by significant nausea, vomiting and abdominal pain in the setting of chronic cannabis use [4]. This syndrome is difficult to diagnose as it bears close resemblance to other pathologies like cyclical vomiting syndrome, reluctance of patient to admit cannabis use [5]. The pathophysiology of CHS is uncertain. The current hypothesis is that CHS results from chronic overstimulation of endocannabinoid receptors which results in derangement in the body's intrinsic control of nausea and vomiting. Also in the peripheral nervous system cannabinoids influence transient receptor potential vanilloid-1[TRPV1] nociceptor system [4]. The two main cannabinoid receptors- CB1 in central nervous system and CB2 in peripheral tissues are identified [6].

Though independent of formulation, CHS is found to be associated with cannabis inhalational form, incineration of plant matter, e-cigarettes i.e. vaporized formulation, synthetic cannabinoids and waxes or oils [6].

Rome IV criteria is used to diagnose Cannabinoid hyperemesis syndrome which includes.

1. Stereotypical episodic vomiting resembling cyclic vomiting syndrome in onset, duration and frequency.
2. Presentation after prolonged excessive cannabis use
3. Relief of vomiting episodes by sustained cessation of cannabis use.
4. Criteria fulfilled for minimum three months, with symptomatic onset occurring at least six months before diagnosis⁵

Another key feature in the patient's presentation include epigastric pain that can radiate diffusely and accompanies onset of vomiting. Both these vomiting and abdominal pain is found to be relieved by hot showers [5]. Clinically there are three phases of CHS.

1. Prodromal phase: in this phase patient presents with nausea without vomiting, anorexia, abdominal discomfort.
2. Hyperemesis phase: this phase can last for many days and is characterized by intractable vomiting, flushing, diaphoresis, abdominal pain. Weight loss is common. Hot showers are believed to relieve the symptoms. It is in this phase more ED visits occur.
3. Recovery phase: Complete resolution of symptoms occur during this phase and patient return to baseline [7,8].

Appropriate workup for CHS include metabolic panel including blood glucose, calcium, sodium, potassium, BUN, creatinine, carbon dioxide, chloride to assess electrolyte derangements and degree of dehydration in the form of prerenal azotemia. Other investigations include complete blood count, urinalysis, and liver function tests. Chest x-ray, CT abdomen, USG abdomen and upper gastrointestinal endoscopy are performed to ensure that no other pathologic processes exist. Choice of imaging modalities depend on physician discretion, history and physical examination findings. Awareness about cannabinoid hyperemesis syndrome among clinicians can decrease number of unnecessary investigations [4,8].

Treatment of cannabinoid hyperemesis syndrome should focus on symptom relief and education for cannabis cessation. The only standard treatment is cannabis cessation, however intravenous hydration and electrolyte correction is the main goal when presents in ED during hyperemesis phase. Antiemetic helpful in CHS in acute setting includes ondansetron, promethazine, and metoclopramide. Other medications that are used in supportive therapy for CHS includes benzodiazepines,

diphenhydramine and antipsychotics like haloperidol and olanzapine. Capsaicin can be applied as topical cream on abdomen which produces heat upon contact with skin and counteracts abdominal pain. Patients should be provided with education, reassurance and referral to cannabis cessation programs [4,6–8].

3.1. Take away lesson

Although the cannabis is known to have anti emetic effect we present this case to aware clinicians about cannabinoid hyperemesis syndrome which may help to reduce unnecessary investigations. The standard treatment of CHS is cannabis cessation but in the emergency department iv hydration, electrolyte replacement is the main goal. Anti emetic drugs can help to treat vomiting and patient must be referred to cannabis cessation program following discharge.

3.2. Informed consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

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Ethical approval

Research studies involving patients require ethical approval. Please state whether approval has been given, name the relevant ethics committee and the state the reference number for their judgement.

Consent

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Author contribution

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Registration of research studies

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

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Declaration of competing interest

There is no any conflicts of interest with this article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2022.104897>.

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