Cannabinoid hyperemesis

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S Sullivan. Cannabinoid hyperemesis. *Can J Gastroenterol* 2010;24(5):284-285.

Cannabinoid hyperemesis syndrome is characterized by chronic, heavy use of cannabis, recurrent episodes of severe nausea and intractable vomiting, and abdominal pain. Temporary relief of symptoms is achieved by taking a hot bath or shower, and resolution of the problem when cannabis use is stopped. Failure to recognize the syndrome leads to misdiagnoses such as psychogenic vomiting, the cyclic vomiting syndrome, an eating disorder or 'drug-seeking behaviour', and may lead to extensive, expensive and unproductive investigations, psychiatric referrals and ineffective treatments. Other than stopping cannabis use, there is no proven treatment. Why a substance known for its antiemetic properties should cause such a syndrome is unknown.

Key Words: *Cannabis; Hyperemesis; Marijuana; Vomiting*

I first encountered cannabinoid hyperemesis syndrome (CHS) in 2004 – I didn't recognize it.

I was asked to see a young man who had numerous visits to the emergency department for episodes of abdominal pain and intractable vomiting. The working diagnosis was pancreatitis because he often had a mild elevation in amylase. It was later revealed to be salivary amylase. An endoscopy had revealed esophagitis and he was taking a proton pump inhibitor. When I went to the emergency department, he was not on his stretcher – his nurse told me that he was in the shower. As I approached, I could hear loud retching. I found the patient huddled on the shower room floor, shrouded in steam, with the hot water beating down on his back. Twenty-four hours later, after intravenous fluids, morphine and metoclopramide, he left against medical advice.

Some time later, in my routine trolling through the table of contents of *Gut*, I stumbled on 'Cannabinoid hyperemesis: Cyclical hyperemesis in association with chronic cannabis abuse' by Allen et al (1) – Eureka!

Since then, I have seen several more cases of CHS and have collected the published reports (2-15). There are 26 cases currently described in the literature.

The classic features of CHS are the following:

1. Chronic, heavy use of cannabis;
2. Recurrent episodes of severe nausea and intractable vomiting;
3. Abdominal pain;
4. Temporary relief of symptoms by taking a hot bath or shower; and
5. Resolution of the problem when cannabis use is stopped.

Undoubtedly, there are lesser versions of the syndrome, and a case missing features 3 and 4 has been described (6). There may also be other symptoms that we have yet to recognize.

L'hyperémèse cannabinoïde

Le syndrome d'hyperémèse cannabinoïde se caractérise par une consommation chronique et importante de cannabis, des épisodes récurrents de nausées sévères et de vomissements réfractaires et des maux de ventre. Les symptômes sont temporairement soulagés par une douche ou un bain chaud, et les problèmes disparaissent à l'arrêt de la consommation de cannabis. Le défaut de dépister ce syndrome entraîne de mauvais diagnostics, tels que les vomissements psychogènes, le syndrome de vomissements cycliques, un trouble de l'alimentation ou un « comportement de recherche de médicaments », et peut donner lieu à des explorations approfondies, coûteuses et improductives, des aiguillages en psychiatrie et des traitements inefficaces. À part arrêter de consommer du cannabis, il n'existe pas de traitement démontré. On ne sait pas pourquoi une substance connue pour ses propriétés antiémétiques peut causer un tel problème.

It is important to recognize CHS because it may be misdiagnosed as psychogenic vomiting, the cyclic vomiting syndrome, an eating disorder or 'drug seeking behaviour', and may lead to extensive, expensive and unproductive investigations, psychiatric referrals and ineffective treatments. The details of the syndrome follow.

Most patients are daily and very heavy users of cannabis and have been doing so for years, often decades, before the vomiting episodes begin. The shortest reported length of use before the onset of symptoms is 18 months (9). The patient may not volunteer that they use cannabis – I have found that asking, "Have you tried marijuana for the vomiting?" is an easy way to approach the topic.

The vomiting episodes are cyclical, occurring every few weeks or months. They may be preceded by a period of intense morning nausea. I've seen two patients who had old food with the first emesis. The vomiting becomes bilious and culminates in intractable retching or 'dry heaves', which may last for hours. Most episodes resolve in 24 h to 48 h, but some may last several days.

The abdominal pain has often been described as epigastric and colicky. It may be diffuse. It may be constant. There may be a component of abdominal wall pain from the force of retching.

The temporary relief of symptoms with an extremely hot bath or shower is a learned behaviour; consequently, it may not be present at the initial presentation. However, once it develops, we are not talking about a routine bath or shower. Baths and showers may last for hours and be repeated up to 20 times per day. One wife said that her husband spent 300 of 365 days in the bath (7). The water-heating bill may become enormous. I've seen one patient whose gas bill was several hundred dollars a month. The patient may check into a motel or finally come to the hospital when they have exhausted the hot water supply at home. The patient may not volunteer that they take a hot bath

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Received for publication September 13, 2009. Accepted October 27, 2009

or shower so, "Ever try a hot bath or shower?" is now part of my routine questioning when I see a patient with otherwise unexplained nausea or vomiting.

On examination, the patient is very distressed and retching repeatedly. It may be near impossible to get them out of the shower. They may appear anxious or agitated, with sweating, tachycardia and postural hypotension. They are often continuously sipping water. Abdominal wall pain with a positive Carnett's sign may be present (16). There may be a low-grade fever if they have recently been bathing.

On investigation, urine will be positive for cannabinoids. There is often a mild leukocytosis. Elevated urea, hypokalemia, hyponatremia and alkalosis may occur. Endoscopy may reveal esophagitis and gastric mucosal trauma from retching. The latter is occasionally mistakenly labelled as 'gastritis'. If performed early, there may be delayed gastric emptying (1,3,10).

Acute treatment consists of fluid and electrolyte replacement. It is uncertain whether any of the antinauseant, antiemetic, analgesic, antisecretory,

prokinetic or sedative medications really help. Smoking marijuana during an episode appears not to help (1,8). Roelofs et al (17) suggested large doses of risperidone.

Chronically, the only therapy reported to be of benefit is cessation of cannabis use. How quickly it helps is uncertain but my impression is that once the patient leaves the emergency department, they will not return if they stop using cannabis. However, symptoms return within weeks if cannabis use is restarted.

I believe that the clinical description of CHS remains incomplete. I have seen one patient with frequent small bowel movements during his attacks, and another two with features of temporary gastroparesis. The polydipsia and the diaphoresis can be quite impressive. There may be other symptoms and signs that we are missing.

Finally, why does the chronic, heavy use of a drug noted for its antiemetic properties occasionally cause a cyclic vomiting syndrome? There has been much speculation but no definitive explanation. Suffice to say, nobody knows!

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