Daily cannabis use and the digestive tract : an underrecognized relationship

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Abstract

A 33 year old man presented with recurrent episodes of hyperemesis with symptom-free intervals since eight years. The diagnosis of cyclic vomiting syndrome due to longstanding and daily cannabis use was retained, after exclusion of any organic cause of vomiting. Although the patient was informed that the clinical response after cessation of smoking is proven to be spectacular, he continued the use of cannabis and kept on presenting with cyclic symptoms of hyperemesis. (Acta gastroenterol. belg., **2010**, 73, **403-405**).

Keywords : cyclic vomiting syndrome ; cannabis ; compulsive bathing

Introduction

Cannabis is commonly recognized for its antiemetic properties. However, although initially criticized, more and more case reports observe the association between daily longstanding cannabis use and cyclic vomiting. We describe the case of a young patient with relapsing vomiting episodes since many years. Repetitive conventional clinical work-up did not find a cause for his problem. By exclusion and intensive anamneses, we retained the diagnosis of cyclic vomiting syndrome (CVS) due to longstanding and daily cannabis use.

Case report

A 33 year old man was admitted to the emergency department for acute vomiting. He manifested symptoms of relapsing vomiting episodes since 8 years. The episodes of hyperemesis followed a cyclic pattern every few weeks or months and were stereotypical with an acute onset and spontaneous ending after approximately four days. He was free of symptoms between these episodes. He could not associate symptoms with food-intake. Occurrence was both daily and nightly. Whereas the bouts were mostly associated with palpitations and general discomfort, he had no fever and stools were normal. A work-up in the past only showed a reflux-esophagitis Los Angeles grade B, attributed to the vomiting. He was treated with omeprazole since several years. The patient had a well known history of hyperventilation and depression, treated with mirtazapine and escitalopram.

Physical examination on admission showed a dehydrated patient, with stable hemodynamic parameters, a normal cardiopulmonary auscultation, painless abdomen and normal neurological tests, except for bilateral mydriasis.

Routine blood analysis showed only low sodium (136 mEq/L, N > 138) and potassium (3.3 mEq/L, N > 3.6) levels, as well as slightly increased leucocytes count. All other tests, including liver, renal and thyroid function were normal. Upper gastrointestinal endoscopy confirmed an esophagitis Los Angeles grade B, again most likely caused by high intensity vomiting. An abdominal X-ray did not show any signs of obstruction and a CT scan ruled out other abdominal abnormalities. A brain CT scan revealed no underlying intra-cranial neurological problem. Chest X-ray and upper gastrointestinal Barium X-ray series were normal. Psychiatric consult detected no psychotic elements or sleeping disorders, nor inter-episodic eating disorders. However, by psychiatric re-questioning anxiety attacks were revealed, as well as several years of cannabis use.

Treatment was based on intravenous rehydration and anti-emetics, without significant evolution. Proton pump inhibitors were continued, but did not result in any improvement of the symptoms. During hospitalization the patient showed behavior of compulsive warm bathing, with relief of the symptoms.

After 4 days the complaints disappeared. The patient was informed about the probable diagnosis of cyclic vomiting due to longstanding cannabis use.

He could be discharged after 4 days.

In the following months, the patient consulted the emergency room again with similar symptoms of hyperemesis. Anamnesis revealed that he still used cannabis. We again urged him to stop using cannabis.

Discussion

The Cyclic Vomiting Syndrome was first described by Lombard (1) in 1861, presenting mostly in children and characterized by recurrent, stereotypical episodes of vomiting with symptom-free intervals of variable duration. The three essential clinical features were first described in 1882 (2) and continue to be used as diagnostic criteria for this disorder : three or more discrete

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episodes of vomiting should have occurred in the last year ; inter-episodic there are varying intervals of completely normal health ; the episodes are stereotypical regarding timing of onset, symptoms and duration. In the 1990s, renewed interest in CVS led to the Rome III Diagnostic Criteria for Cyclic Vomiting Syndrome, which contain the 3 criteria stated above, as well as a fourth criterion that includes the absence of any organic cause of vomiting (3). The fifth supportive Rome III criterion is the personal or family history of migraine headache. A clear etiology of CVS is yet to be identified, however it has also been linked to food allergy, mitochondrial DNA mutations and to metabolic or endocrine disorders. Approximately 50 percent of patients have esophagitis. This can be induced by vomiting and does not necessarily imply that reflux is an underlying cause. Response to antireflux measures is poor (4).

Cannabis use becomes more and more prevalent among teenagers and young adults (5,6). Delta-9-tetrahydrocannabitol (THC) is the main component of marijuana. This drug is a powerful antiemetic that can be used in oncology for the treatment of refractory nausea and vomiting (7). The episodes of recurrent nausea and vomiting reported in association with cannabis use are therefore also called “paradoxical” hyperemesis. Cannabinoids are a group of compounds acting via receptors (CB1 and CB2). The CB1 receptors are not only present in the central nervous system, where they are responsible for the psychoactive and neuronal effects of cannabis, but are also found peripherally, in gut and liver (8,9), as well as in the adipous tissue (10) and the endothelial cells (11). CB2 receptors are expressed mainly in macrophages and spleen (12). Some experimental works underline the role of the endocannabinoid system in liver lipogenesis and fibrogenesis (13). Recently, clinical research emphasized the role of cannabis as independent factor in the development of steatosis and fibrosis in hepatitis C (14,15).

Concerning the causal association between chronic daily cannabis use and cyclic vomiting only few case reports have been published (16,17). Cannabinoids could affect the gastric motility, especially concerning solid food (18). Allen *et al*. provided the most precise description of this syndrome (16). Early morning nausea and vomiting especially by smell of food, intense sweating, abdominal pain with polidypsia are the most typical features. These episodes can recur on a weekly or monthly basis. Some descriptions also mentioned a typical behavior of repetitive, compulsive bathing and washing during vomiting cycles with chronic cannabis users, as was the case for our patient (16,18-21). This could be due to a dysfunction of central thermoregulation systems. This bathing behavior can be confused with obsessive-compulsive disorders encountered in psychogenic disorders.

The absence of any organic cause of vomiting is now a part of the definition of Cyclic Vomiting Syndrome, and as a matter of fact, most patients with this disorder often have unneeded repetitive diagnostic work-ups in their previous history. Therefore correct anamnestic data are mandatory to avoid this. During the acute symptoms, a supportive treatment is applied, and stopping the cannabis use induces a complete cessation of all symptoms. Recurrence is the rule in case of reuse of cannabis.

Since cannabis smoking is becoming more and more legalized and socially accepted, no harm is seen in daily use and no association with vomiting is mentioned outside case series in medical literature. However, case reports become more and more frequent and the clinical response after cessation of smoking is spectacular. It is important that this association is better known.

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