SEUP
SOCIEDAD ESPAÑOLA DE URGENCIAS DE PEDIATRÍA

EMERGENCIASPediátricas
Vol. 3. No. 2. May - August 2024

*Emerg Pediatr. 2024; 3(2): 91-93*

CASE REPORT

# Accidental cannabis intoxication with an unexpected outcome

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Received on July 13, 2023
Accepted on September 19, 2023

*Key words:*

Cannabis
Emergencies
Drowsiness
Intoxication

Palabras clave:

*Cannabis*
*Emergencias*
*Somnolencia*
*Intoxicación*

## Abstract

The use of cannabis and its derivatives has increased significantly in recent years. This has led to a rise in cases of accidental intoxication in young children and infants, especially in countries where its use has been legalized. The variety of available products containing cannabis makes it difficult to identify the source of exposure.

We report the case of a 6-year-old boy who came to the emergency department because of vomiting and severe headache while at school. On arrival at the emergency department, he presented with drowsiness and bradypsychia. Complementary examinations did not reveal any abnormality, except for the presence of cannabinoids in urine. The family and the school were unaware of the source of intoxication and only the correct coordination between the social services and the school managed to clarify the origin of the intoxication.

Correct identification of the source of intoxication is essential to implement preventive measures, such as improving labeling, establishing safety barriers, or adapting legislation for these products. It is important that healthcare providers consider a wide range of potential sources of intoxication before declaring it as unknown.

### INTOXICACIÓN ACCIDENTAL POR CANNABIS CON DESENLACE INESPERADO

## Resumen

*El consumo de cannabis y sus derivados ha aumentado significativamente en los últimos años. Esto ha llevado a un incremento en los casos de intoxicación accidental en niños pequeños y lactantes, especialmente en países donde su consumo se ha legalizado. La variedad de productos disponibles que contienen cannabis dificulta la identificación de la fuente de exposición.*

*Se expone el caso de un niño de 6 años que acudió a Urgencias por vómitos y cefalea intensa estando en la escuela. A su llegada a Urgencias presentaba somnolencia y bradipsiquia. Las exploraciones complementarias no revelaron ninguna anormalidad, excepto por la presencia de cannabinoides en orina. La familia y la escuela desconocían la fuente de intoxicación y solamente la correcta coordinación entre Servicios Sociales y el centro escolar consiguieron esclarecer el origen de la intoxicación.*

*La identificación correcta de la fuente de intoxicación resulta esencial para poder adoptar medidas preventivas, como pueden ser mejorar el etiquetado, establecer barreras de seguridad o adecuar la legislación de estos productos. Es importante que los profesionales de la salud consideren una amplia gama de posibles fuentes de intoxicación antes de declararla como desconocida.*

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## OBJECTIVE OF THIS CASE REPORT

To warn about new sources of accidental cannabis intoxication in pediatric patients.

## INTRODUCTION

The use of cannabis and its derivatives, both for recreational purposes and for therapeutic or cosmetic purposes, has increased significantly in recent years with the emergence of stores specializing in these types of products. The variety of forms and products marketed with this substance is growing every day.

Although still an infrequent reason for consultation, unintentional cannabis intoxications among young schoolchildren and infants have increased in recent years due to the wide availability of this substance[1], especially in countries where its use has been legalized[2].

The wide range of available products can make it difficult to recognize the source of exposure. Here we describe the case of a schoolchild with accidental cannabis intoxication, where the source of intoxication could not be clarified until there was interdisciplinary coordination between the social work and education teams. Given the interest generated by the peculiarity of this case (unknown source of intoxication) it is presented for consideration.

## CASO REPORT

A 6-year-old boy with no remarkable history came to the emergency department due to vomiting and severe frontal headache of sudden onset during his stay at school 6 hours before the visit. There was no history of head injury, and the patient was previously asymptomatic.

Upon admission to the emergency room, he exhibited an alteration of the pediatric assessment triangle due to an abnormal appearance. He showed a tendency towards somnolence but responded appropriately to verbal commands, albeit with marked bradypsychia. Initial vital signs were within normal limits. The only notable finding from the initial neurological examination was a Glasgow Coma Scale score of 13 (Eye 3, Verbal 4, Motor 6), with mydriatic, isochoric, and reactive pupils.

Due to neurological symptoms, initial investigations included a complete blood count, coagulation profile, basic metabolic panel, and arterial blood gases, all of which were normal. Additionally, a urine toxicity screen was conducted. An urgent brain computed tomography (CT) scan was performed, which showed no significant abnormalities. The urine toxicology test indicated the presence of cannabinoids but was negative for other toxins screened. Consequently, the patient was admitted to the hospital for strict dietary management, intravenous fluid therapy, close monitoring of symptoms, and ongoing assessment of his condition.

When the family was asked about the test results, they indicated they were unaware of the possible source of intoxication, asserting they did not live with cannabis users in their household. The school was subsequently contacted for additional information, confirming the patient had been asymptomatic upon arrival but began exhibiting clinical symptoms shortly after returning from morning recess.

Social services were notified to assess the case, and it was confirmed that the family did not demonstrate any social risk indicators at present.

When the family was interviewed again, the mother reported that on the day of the incident, the patient had eaten a package of cookies for breakfast that she had found the previous day in a room at the hotel where she works as a housekeeper. The package was sealed and showed no signs of tampering. With this new information, social services contacted the school, which confirmed the presence of a "Stoneo" cookie wrapper in the classroom garbage can and provided photographs of it (Figure 1). The packaging mentioned an amount of 300 mg without specifying the substance to which this amount referred. It was assumed to be tetrahydrocannabinol, given phrases such as "Stoner's favorite cookie" on the labeling and the final diagnosis of the case.

During his hospital stay, the patient showed progressive improvement in his neurological status with good oral tolerance, and he was discharged with a normal physical examination 18 hours after admission.

## DISCUSSION

The clinical presentation of the case was consistent with typical symptoms of cannabis intoxication. Symptoms are usually nonspecific and include manifestations such as central nervous system depression (lethargy, coma), confusion, agitation, and ataxia. Nausea and vomiting, conjunctival hyperemia, mydriasis, tremors, speech difficulties, and behavioral disturbances are common. In episodes of severe intoxication, bradycardia, hypotension, convulsions, and respiratory depression have been reported, and may require orotracheal intubation[3].

Regarding diagnosis, the literature shows that invasive and unnecessary complementary examinations, such as CT scan or lumbar puncture, are relatively frequent, especially if a thorough anamnesis is not conducted and directed towards the possible intake of toxins[4]. However, due to legal or social implications, parents may choose not to disclose possible exposure to toxins, complicating the diagnostic process. In the case presented here, in the absence of any indication of possible intake of a toxic substance, a CT scan was performed prior to the urine toxicity test, which ultimately revealed the cause of the clinical presentation.

Considering the age of presentation, the low incidence in this age range is noteworthy. Classical studies show a bimodal distribution with a first peak in early childhood, which responds to intoxications due to the exploratory drive of infants, and a second peak during adolescence, when recreational use begins[5,6]. Therefore, intoxications at school age are infrequent. However, an increase in accidental poisonings in this age group has recently been observed following the relaxation of legal restrictions in certain countries, which is associated with the consumption of edible products. These new products, such as the one in this case, are produced


**FIGURE 1.** Wrapping of cookies eaten by the patient.

and packaged to imitate popular sweets, greatly facilitating consumption by patients in this age group[7]. In contrast, in countries where cannabis use is still illegal, there has been an increase in patients under 6 years of age attributed to a general increase in its use[8].

## COMMENTS

The accurate identification of the source of intoxication is of great importance to consider possible interventions at the commercial level (a change of labeling with improvement of the identification and risks of the substance, prohibition of certain products, etc.) as well as to avoid possible interventions by social work teams to assess intrafamily negligent behaviors that would be unnecessary if the source were correctly established.

In the presented case, it was found that the product is marketed in some states of the United States, Canada, and Mexico, and can be purchased online. Given the great similarity of the packaging and contents to a product commonly consumed by the pediatric population, it is considered that this type of intoxication could be repeated, and thus the product should be withdrawn from the market.

In conclusion, it is likely that cannabis intoxications in all age groups will become increasingly frequent in the coming years, given the wide and growing range of possible sources of exposure. Consequently, a detailed and focused anamnesis could prevent the use of unnecessary complementary tests, as well as the unwarranted intervention of social services. Identifying the source of intoxication is essential for implementing legal measures regarding the commercial distribution of such products. Therefore, healthcare providers should consider a wide range of potential sources of intoxication before deeming it unknown.

*Ethical-regulatory aspects: informed consent has been obtained from the parents.*

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