

SUDDEN ONSET NEUROLOGICAL DETERIORATION IN INFANT. THINK OF CANNABIS INTOXICATION, CASE REPORT

**Dr. Mohssen Aljahfoul, Dr. Saeed Alzahrani, Dr. Mohammed Abdul Maleque Molla, Dr. Attallah Almutairy,
Dr. Mohammed Albahkali Dr. Faisal Alanazi and Dr. Badi Alenazi***

Department of Pediatric, Alyammamah Hospital, Riyadh, Saudi Arabia.

***Corresponding Author: Dr. Badi Alenazi**

Department of Pediatric, Alyammamah Hospital, Riyadh, Saudi Arabia.

Article Received on 13/06/2017

Article Revised on 03/07/2017

Article Accepted on 24/07/2017

ABSTRACT

We report on 10-month-old infant who was admitted to hospital with severe neurological symptoms following passive inhalation of cannabis. To the best of our knowledge we think that this is one of the few reported case of the acute severe toxicity of cannabis smoke by an infant. Urine THC (delta-9-tetrahydrocannabinol) Δ^9 -THC concentration were detected in the urine of our patient. it is important to consider cannabis intoxication in the differential diagnosis of acute neurological deterioration in infant.

KEYWORDS: cannabis intoxication, Marijuana, hashish. Delta- 9-tetrahydrocannabinol.

INTRODUCTION

Cannabis is the general term used for products made from the plant *Cannabis sativa*, such as marijuana, hashish. The main mind-altering ingredient in cannabis is THC (delta- 9-tetrahydrocannabinol) (Δ^9 -THC). It is mostly responsible for the changes in, thoughts, perceptions behavior and mood. Cannabis enter bloodstream, and then travel to specific cannabis receptors in the brain, where it is activated.^[1] We report on 10-month-old infant who was admitted to hospital with severe neurological symptoms following passive inhalation of cannabis smoke at home by his father.

CASE REPORT

A 10 months old male was presented to pediatric emergency with history of sudden crying and restlessness about 30 minutes then became sleepy lethargic and difficult feeding after passive inhalation of cannabis smoke by his father at home.

He was a product of 37 week of pregnancy and delivered by normal spontaneous vaginal delivery. No pervious admission or surgeries. No history of head trauma or meningitis. no history of vomiting or changes in the bowel habits, no abdominal pain, no jaundice .no history of coughing, shortness of breath, no earache or sore throat, no cyanosis or sweating He was not on any medication. There was no consanguinity between parents. He has 3 siblings. All live and healthy. There is no history of similar condition in the family. Vaccination was up to date. Developmental parameters were appropriate for age. He was on milk formula and family diet with average appetite.

On examination, he was not dimorphic, weight, height, and head circumference were normal. he was afebril, sleepy, lethargic, not in respiratory distress, not dehydrated, there is an obvious jaundice and pallor, feeding and appetite are decreased. cardiac, chest and abdominal examination were unremarkable. CNS examination revealed. normal pupil reflex, GSC 8/15 Musculoskeletal examination were normal

Investigations showed Hemoglobin 11 g dl, white blood cell (WBC) $17.9 \times 10^3/\mu\text{L}$, neutrophil 54% and lymphocyte 34%. Serum urea and electrolytes were normal. Liver function tests were normal. Blood gas was normal. CT scan brain was normal (figure1)

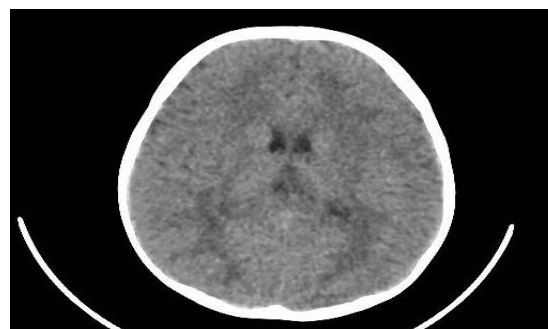


Figure 1: normal CT scan of child brain.

Urine for toxicology screen was sent and Urine(delta-9-tetrahydrocannabinol) were 99 ng/ml.

The infant was admitted to pediatric intensive care unit where he was kept under close observation and

monitoring. he showed dramatic improvement in his condition next day. Child protection committee was notified. infant was discharged in stable condition.

DISCUSSION

Marijuana is a term which describes the dried leaves, stems, flowers and seeds from the hemp plant that are often smoked for recreational use. Marijuana contains different chemicals called cannabinoids. Cannabinoids are the chemicals found within cannabis that interact with specific receptors, namely, cannabinoid (CB) receptors, within the human body. There is more than 60 types of cannabinoids currently identified differ by the degree to which they are psychoactive^[2] While delta-9-tetrahydrocannabinol (THC), the cannabinoid most commonly associated with marijuana as a drug of abuse, is psychoactive, other cannabinoids are not.^[3]

Δ9-tetrahydrocannabinol (THC) is the primary psychoactive component of marijuana. It reaches peak plasma concentrations after 1–6 hours, and its plasma levels remain elevated, with effects lasting up to 5–24 hours. Marijuana is metabolized in the liver, and the metabolites are excreted in urine. Urinary metabolites can be detected up to 12 days after consumption.

Unlike most other drugs of abuse, marijuana are commonly exposed by smoking, a process which releases smoke to the user's close surroundings. several factors determine the amount of cannabinoids that may be exposed by passive inhalation. Including the amount of sidestream smoke released; the concentration of Δ9-THC in the smoke; and the amount of smoke in the environment, the length of time an individual is exposed to the smoke; the type and size of the enclosure (room or vehicle); and the amount of ventilation during exposure.

The clinical effects of THC are highly variable among individuals. In adolescents and adults, the acute effects includes dizziness, heart rate changes, blurred vision, altered sensorium, cognitive impairment, hallucinations and psychosis.^[6]

The reports on THC effects in infants are few and toxicity following passive inhalation of THC in this age group has been reported as the following clinical signs; tachycardia, conjunctival hyperemia, pallor, ataxia, nystagmus, fine tremor, lability of affect and stupor.^[7,8,9] Signs and symptoms begin few hours after inhalation and usually resolve completely within 24 hours. Accidental cannabis ingestion has been reported to lead to coma in children.^[10]

Management of acute marijuana intoxication is primarily supportive. Benzodiazepines may be considered to control panic attacks and agitation.^[11] Children should be observed for at least 6 hours after ingestion, and for 24 hours if symptomatic because THC has a terminal half-life of 20–30 hours.^[12]

CONCLUSION

In the cases we have described 10-month-old infant who was admitted with severe neurological symptoms following passive inhalation of cannabis. it is important to consider cannabis intoxication in the differential diagnosis of acute neurological deterioration in infant. Healthcare staff of emergency rooms should be aware of the potential risk of cannabis ingestion in young infants.

A detailed medical history and toxic screen are warranted in all infants with unexplained neurological deterioration. Parent should be informed about the possibility of abusive effects of passive inhalation of THC in children.

REFERENCES

1. Bauman A, Phongsavan P Epidemiology of substance use in adolescence: Prevalence, trends and policy implications. *Drug and Alcohol Dependence*, 1999; 55: 187-207.
2. University of Washington Alcohol and Drug Abuse Institute [Internet]. Seattle: University of Washington. Updated June 2013. Cited June 8, 2016. <http://learnaboutmarijuanawa.org/factsheets/cannabinoids.htm>. Accessed, March 19, 2017.
3. Borgelt LM, Franson KL, Nussbaum AM, Wang GS. The pharmacologic and clinical effects of medical cannabis. *Pharmacotherapy*, 2013; 33(2): 195-209.
4. American Academy of Pediatrics Committee on Drugs. Effects of marijuana on man. *Pediatrics*, 1975; 56: 134-43.
5. Huestis MA, Cone EJ Relationship of Delta 9-tetrahydrocannabinol concentrations in oral fluid and plasma after controlled administration of smoked cannabis. *J Anal Toxicol*, 2004; 28: 394-399.
6. Reece AS Chronic toxicology of cannabis. *Clin Toxicol (Phila)*, 2009; 47: 517- 524.
7. Bryson PD. Marijuana. In: Comprehensive review in toxicology for emergency clinicians. Washington, DC: Taylor & Francis, 1996: 531-534.
8. Blackstone M, Callahan J an unsteady walk in the park. *Pediatr Emerg Care*, 2008; 24: 193-195.
9. Bonkowsky JL, Sarco D, Pomeroy SL Ataxia and shaking in a 2-year-old girl: acute marijuana intoxication presenting as seizure. *Pediatr Emerg Care*, 2005; 21: 527-528.
10. Macnab A, Anderson E, Susak L Ingestion of cannabis: a cause of coma in children. *Pediatr Emerg Care*, 1989; 5: 238-239.
11. Croche Santander B, Alonso Salas MT, Loscertales Abril M. [Accidental cannabis poisoning in children: report of four cases in a tertiary care center from southern Spain]. *Arch Argent Pediatr*, 2011; 109: 4-7.
12. Adams IB, Martin BR. Cannabis: pharmacology and toxicology in animals and humans. *Addiction*, 1996; 91(11): 1585-614.