

DELAYED SYMPTOM ONSET AFTER PEDIATRIC CAMPHOR INGESTION

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Abstract

Introduction: Camphor toxicity after ingestion often causes gastrointestinal symptoms, and in serious cases often involves neurological effects. Symptoms typically occur within 90 minutes of ingestion. We describe a pediatric patient with an atypical and unusually delayed presentation of camphor toxicity.

Case Report: A 4-year-old female presented to the emergency department (ED) via ambulance with altered mental status after a witnessed postictal phase. The child had no history of seizures, no recent surgery or trauma, and initial vitals and physical examination in the ED were normal. The mother reported the child might have ingested an unknown quantity of Vicks® VapoRub approximately 4+ hours prior to the apparent seizure and had been acting normally at daycare in the interim. The girl was alert and maintained her baseline neurologic function with no seizure activity for the duration of her ED encounter, but three hours after ED arrival and seven hours after ingestion, the child began vomiting, with Vicks® VapoRub evident in the emesis. She was given oral ondansetron (Zofran®; GlaxoSmithKline, Middlesex, United Kingdom), was able to per os challenge, and was discharged.

Conclusion: This case illustrates the potential variability of presentation in pediatric camphor toxicity, particularly the lack of gastrointestinal upset as an initial symptom.

Keywords: camphor toxicity, pediatric, seizure

Introduction

Camphor in a variety of non-prescription preparations is commonly available in the United States for medicinal purposes, and cases of camphor-related toxicity in children, while relatively rare, have been reported with some regularity since the late 19th century. We present a case of serious camphor-related toxicity in a child who remained asymptomatic until > 4 hours after accidental ingestion. Informed consent was not required as no personally identifying information was used in this report.

Case Report

A 4-year-old nonverbal autistic female presented to the emergency department via ambulance with altered mental status. The child was initially assessed in the field at 12:25 by emergency medical services (EMS) on a call for an unresponsive child. The mother had picked the child up from daycare and while riding in the car the mother noted the child became lethargic, slumped over and became unresponsive. The mother stopped the car and immediately summoned help. Upon EMS arrival, the girl was grinding and clenching her teeth and responding only to painful stimuli. Vital signs per EMS

were: heart rate 112 bpm, pulse oximetry 95%, respirations 15, temperature 97.7° F, blood glucose 172, pupils were equal and reactive, and good radial pulse with capillary refill < 2 sec. No twitching or seizure activity was witnessed by the responding crew, but an EMS physician medical director was on scene and concluded the child was postictal and that benzodiazepine was not indicated. Upon questioning about possible ingestions, the physician elicited from the mother that the child may have eaten an unknown quantity of Vicks® VapoRub earlier that morning, sometime before 08:00. The mother had used the product as directed the night before to see if it would help the child sleep better. She found the child with the container in the morning and had to clean some of the product off of her prior taking her to daycare. The child was transported to the emergency department by EMS, accompanied by her mother.

Upon arrival in the emergency department at 12:45, the child was clenching her jaw but not seizing. Her eyes were open, she attempted to remove the pulse oximeter, and was actively fighting the oral examination by biting on the tongue depressor. The physical

examination was otherwise unremarkable. Initial vital signs were temperature 96.7° F, blood pressure 104/67 mmHg, heart rate 133, respirations 24, and oxygen saturation 99%. The mother stated her daughter had no history of seizures, and no recent trauma or surgery, but that she had recently had cold like symptoms and had ongoing nutritional issues. For the 4-5 hours between ingestion and the unresponsive episode, the child had been at daycare and staff reported she had been acting normally for her. Poison control was consulted about the Vicks® product and they indicated ingestion most commonly produces gastrointestinal symptoms, and in serious cases altered mental status and seizures, but that toxicity and related symptoms typically manifest within 90 minutes of ingestion. Since the timeline of events did not align with this presentation and the quantity consumed was unknown, further workup was undertaken to rule out other potential causes for her seizure. Electrocardiogram, chest radiograph, and head computed tomography (CT) without contrast were all normal, and urinalysis and blood work were all within normal limits. The patient was alert and herself during the course of the workup. At approximately 15:35 while still in the emergency department, the child began vomiting, with Vicks® VapoRub clearly present in the emesis. With the etiology of this episode clear at this point, the child was treated with oral ondansetron (Zofran®; GlaxoSmithKline, Middlesex, United Kingdom), was able to subsequently per os challenge, and was discharged.

Discussion

Since 1983, the United States Food and Drug Administration has restricted the concentration of camphor allowed in over-the-counter therapeutic products to < 11%, however ingestion by small children of as little as 5 mL of products at this concentration can induce serious toxicity. Several contemporary case reports of children being poisoned through exposure to camphor tablets which are often illegally imported and sold in the United States for cultural and ceremonial purposes highlights an emerging and unregulated means of exposure. In cases of serious camphor toxicity, symptoms generally appear rapidly and the likelihood of toxicity in patients who remain asymptomatic for > 4 hours after ingestion is low. In the only similar case report of delayed symptom onset in the literature, a 4-year old child had ingested Vicks® VapoRub and subsequently suffered vomiting and a witnessed tonic-clonic seizure at five and nine hours after ingestion,

respectively.

Conclusion

This case illustrates that seizure may precede gastrointestinal symptoms in a young child with severe camphor toxicity, and although atypical, symptom onset may occur > 4 hours after ingestion. It may be prudent for emergency department providers to query caregivers about possible camphor ingestion in very young children with a first afebrile seizure unaccompanied by gastrointestinal upset, particularly in patient populations where camphor tablets may be common household items.

Informed Consent: Informed consent was not required as no personally identifying information was used in this report.

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