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Case Report

Camphor: A Common Substance, An Uncommon Cause of Seizure

Varoon Vadodaria[1] and Shivananda Pai[2]*

[1]*Department of Neurology, SBKSMIRC, Dhiraj Hospital, India*

[2]*Department of Neurology, KMC Hospitals, Mangalore, India*

Abstract

Camphor, a readily available substance, presents itself as a colourless or white crystalline powder or cubes, characterized by a potent mothball-like fragrance. Possessing a density identical to that of water, it releases inflammable vapours when temperatures exceed 150°F. This versatile compound finds application in the creation of moth repellents, pharmaceuticals, and religious ceremonies.

In this context, we present a case involving a 3-year-old child who experienced a Generalized Tonic-Clonic Seizure (GTCS) subsequent to the unwitting ingestion of camphor. This incident underscores the significance of thorough patient history-taking, shedding light on the potential of commonplace household materials such as camphor to precipitate seizure events.

Introduction

Camphor, characterized by its waxy and colourless solid form along with a potent aroma, falls under the classification of a terpenoid and a cyclic ketone [1]. Its natural occurrence takes place within the wood of two distinct trees: the camphor laurel (Cinnamomum camphora), an expansive evergreen tree prevalent in East Asia, and the kapur tree (Dryobalanops sp.), a towering timber tree primarily found in Southeast Asia [2].

Camphor is a toxic substance. Exposure can be in form of ingestion (most common), inhalation, and absorption from skin and mucous membrane (contact) [3,4].

Case Presentation

A 3-year-old male child was in good health until the afternoon, when his mother noticed stiffness in all four limbs. This was followed by jerky movements of all four limbs and upward rolling of the eyes. These symptoms persisted for approximately 2 minutes before spontaneously resolving. After the episode, the child appeared confused but returned to his normal state within half an hour.

The parents reported that the child had vomited twice, with the vomit containing both food particles and emitting a distinct camphor smell. The parents indicated that camphor had been used for religious purposes during a puja at home. The child's medical history, family history, birth history, and developmental history were all unremarkable.

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***Corresponding author:** Varoon Vadodaria, Department of Neurology, SBKSMIRC, Dhiraj Hospital, SBKSMIRC, Sumandeep Vidyapeeth, At & Po. Pipariya, Taluka Waghodia, Dist, Vadodara, Gujarat, India

Upon presenting at our medical facility, the child was admitted and evaluated for generalized tonic-clonic seizures. During the examination, the child displayed playful behavior, and no abnormal neurological findings were observed. Treatment was initiated, including Lorazepam, antiemetics, and other supportive measures. An MRI of the brain revealed no abnormalities, and an EEG showed no signs of abnormal epileptiform discharges. Routine blood tests and metabolic parameters returned normal results. Throughout the hospitalization, there were no further instances of seizure activity, and the patient was discharged in a stable condition.

The patient returned for a follow-up appointment after 1 month, with no reported seizure episodes.

Discussion

Household agent poisoning is prevalent among children, with accidental cases being more frequent in those under 6 years old, while intentional incidents are more common in children aged 12 and above [5].

Camphor is widely available for external applications, serving various purposes such as cough suppression, nasal congestion relief, cold sore treatment, the formulation of muscle liniments, and the creation of rubefacients. Additionally, solid camphor finds use in religious ceremonies and pest control, while liquid camphor is utilized for dermal and inhalational applications.

Historically, camphor has also been employed as an aphrodisiac. United States poison control centers receive reports of approximately 9,000 to 11,000 camphor exposures annually [6,7].

Camphor is lipophilic and well-absorbed through the skin and mucous membranes, especially in young infants. Gastrointestinal absorption is rapid with an onset of action of toxic effects within 5 to 20 minutes and a peak effect at 90 minutes. Expert consensus suggests emergency evaluation for any child exposed to doses >30 mg/kg. Seizures are unlikely to occur at doses less than 10 mg/kg [8].

Camphor poisoning presents with distinctive features, encompassing a history of either oral ingestion or topical exposure to products containing camphor. Detectable signs include a

potent medicinal smell on the breath or skin, depending on the mode of exposure. Oropharyngeal irritation, characterized by sensations of burning or stinging, often accompanies the poisoning. Gastrointestinal symptoms, such as nausea, vomiting, and abdominal pain, are common manifestations. Seizures may emerge as an initial and alarming sign of exposure. Additionally, the central nervous system can be profoundly affected, leading to symptoms like agitation, confusion, myoclonus, hyperreflexia, lethargy, and, in severe cases, coma. Notably, rare occurrences involve patients experiencing delirium and altered mental status, which can persist for up to seven days following ingestion. Recognizing these key findings is crucial for prompt identification and management of camphor poisoning cases [9,10].

The treatment of camphor poisoning primarily involves supportive measures, with a particular focus on managing seizures. Prompt decontamination is crucial as camphor is rapidly absorbed from the stomach, potentially leading to sudden altered mental status and seizures shortly after ingestion [8].

For asymptomatic cases, a mandatory 24-hour observation period is advised, followed by discharge if no symptoms emerge. Seizures, if present, should be controlled using benzodiazepines, and if not effectively managed, a second anticonvulsant may be added. In cases of refractory seizures, management should adhere to established epilepsy guidelines. It's noteworthy that, according to case reports, long-term anticonvulsant treatment is generally not deemed necessary. Hemodialysis serves as an advanced therapeutic option to address severe cases and plays a crucial role in managing renal complications or significant toxicities that may not respond adequately to other treatment modalities. The emphasis on supportive care and tailored interventions underscores the importance of a comprehensive approach in addressing camphor poisoning [8].

Conclusion

Camphor-containing agents are typically diverse and available in various forms. Symptoms of camphor poisoning are often nonspecific and can mimic other diseases, underscoring the importance of obtaining a detailed history for accurate diagnosis. Therefore, a high level of suspicion is essential, especially in cases involving an unresponsive child, as the diagnosis may be overlooked [11,12].

In the absence of a specific antidote, the mainstay of management revolves around providing effective supportive care. Implementing stringent safety measures at home is crucial for mitigating the morbidity and mortality associated with poisonings. By emphasizing preventative strategies and fostering awareness, it is possible to significantly reduce the risks and adverse outcomes associated with exposure to potentially toxic substances.

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