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Case report

Camphor poisoning—An unusual cause of seizure

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Introduction

Small children have a tendency to put everything in the mouth; hence, poisoning due to accidental ingestion of commonly available household toxic substances is quite common in infants and small children. A wide variety of medications and substances can cause serious illness or kill a child who ingests just a single dose in small quantity. Camphor is one such substance easily available in many Indian households and is not a very well-recognised potentially fatal toxic compound. Around 3–5 mL of 20% camphor oil or > 30 mg/Kg is a potentially lethal dose.^{1,2} We report the case of a 3^{1/2}-year-old girl presenting with afebrile generalised tonic seizures. The causal association of accidental camphor ingestion was suspected based on smell of camphor in vomitus.

Case report

A 3^{1/2}-year-old girl was brought to the hospital with history of two episodes of afebrile generalised tonic seizures within a span of 20–30 minutes. On arrival in the hospital she was conscious but drowsy, afebrile, and her vital signs were stable. She had no focal neurological signs and her systemic examination was essentially normal. She vomited once in the hospital

soon after admission. The vomitus had a strong odour of camphor and contained a few white particulate materials. On questioning, parents told that approximately 1–1^{1/2} hour before the onset of seizure they had gone to a temple for Shivratri Pooja where the child was playing with a small camphor tablet which she might have ingested. There was no seizure recurrence since admission. Routine haematological and biochemical parameters including blood sugar, serum electrolytes, and serum calcium were within normal limits. Electroencephalography (EEG) record was normal. She was under observation for 72 hours in the hospital and managed symptomatically. She remained asymptomatic and was discharged. She was asymptomatic on follow-up one month after discharge.

Discussion

Camphor is a very toxic compound which can prove fatal for infants and children on ingestion even in very small doses.³ The strong aroma associated with camphor has attracted its use in many oils, inhalants, and ointments, especially as a remedy for the common cold. It is a component of many preparations available over the counter (Vicks Vaporub, Camphor-phenol oral rinse, Supergesic, Sloan's balm, Peking balm, etc.) and has a potential for accidental ingestion by

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infants and small children. Camphor is also an ingredient for many oils and in its solidified form is commonly used in religious events and prayers.

Eventhough some reports do exist, yet camphor poisoning-induced seizures are an infrequently documented event in our country in spite of its easy availability in many households probably because of the subclinical effects encountered after ingestion in most patients. A similar case was reported in a 3-year-old girl presenting with seizure following accidental ingestion of a camphor tablet at a religious ceremony.⁴ In a recent study on the profile of childhood poisoning from a tertiary care centre in North India, majority of patients (63.9%) were in the 1-3 year age group and kerosene (27.9%), drugs (19.8%), and insecticides (11.7%) were the agents most frequently implicated.⁵ The site of action of camphor is supposed to be intra- neuronal and on the oxidation cycle at a phase above the flavoprotein cytochrome-b level of the cytochrome oxidase system. This has been supported by postmortem changes of severe anoxia in the neurons.⁶

With significant ingestion of camphor (> 50 mg/Kg body weight) neurologic toxicity is common, with generalised tonic clonic activity being the most prominent manifestation occurring variably from five minutes to 90 minutes after exposure. Symptoms appear rapidly after ingestion and seizures have been reported after the ingestion of camphor in 6% of cases.⁷ Patients usually present with severe nausea, vomiting, lethargy, ataxia, and convulsions. Patients who have ingested > 30 mg/Kg of a camphor-containing product or who are exhibiting symptoms of moderate to severe toxicity (e.g. convulsions, lethargy, ataxia, severe nausea, and vomiting) by any route of exposure should be referred to an emergency department for observation and treatment. Patients exhibiting convulsions following a camphor exposure should be transported to an emergency department by pre-hospital emergency medical care providers. Camphor is rapidly absorbed after ingestion from the gastrointestinal tract; hence, neither activated charcoal nor gastric lavage is helpful. The American Association of Poison Control Centre does not therefore recommend either activated charcoal or gastric lavage for camphor poisoning.⁸ Induction of emesis with ipecac syrup should not be performed. For asymptomatic patients with topical exposures to camphor products, the skin should be thoroughly washed with soap and water and the patient can be observed at home for development of symptoms.⁸ A benzodiazepine should be used

to control convulsions and patients who have been exposed to a camphor product and patients who remain asymptomatic after four hours can be safely observed at home.⁸

Since, camphor is easily available in many Indian households for religious purposes (each tablet may contain up to a few grams of camphor) and is also present in many over the counter cold medications and rubefacients, parent education regarding this toxic and potentially fatal compound and keeping them away from easy access to children is very important for preventing camphor poisoning.

Camphor poisoning should be considered as a cause of seizure in otherwise healthy children and parents should be asked regarding a possible ingestion of camphor products in the preceding few hours.

Conflicts of interest

None identified.

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