

Inhalation Camphor Toxicity in an Infant during COVID-19 Pandemic

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ABSTRACT

Camphor toxicity is common and under reported toxicity of substance especially among children less than 6 year age. (1) Exploratory ingestion or cutaneous applications are common route. Camphor is widely available in household, used in religious ceremonies, as fumigant, insect repellent, pain relieving syrups or emollients, vaporizers etc. Gastrointestinal and central nervous symptoms occur commonly after ingestion of camphor products.(1,2) As general belief among people like fumes of camphor can cut chance of respiratory infections(during corona virus pandemic), we came across a case where camphor tablets led to inhalation toxicity where an infant presented with vomiting and loose stool and acute decrease of sensorium. Condition improved and case sent home after 8 hours of hospital stay. Inhalation route of camphor toxicity is under reported, although not uncommon. Wide availability of camphor products in houses within approach of children and exposure of camphor to infants make them vulnerable to toxicity. Hence, awareness about potential toxic and lethal effect of raw camphor products should be raised among general population.

Keywords: Camphor toxicity, Inhalation, infant, COVID-19 Pandemic

INTRODUCTION

Camphor toxicity is common and under reported toxicity of substance among childhood. Camphor is an essential oil obtained from tree *Cinnamomum camphora*.(3) As camphor containing

substances are very commonly available in household in form of vaporizers, pain relieving ointments, as tablets to use during religious ceremonies, air purifier etc., their toxicity is not uncommon among children. Ingestion and cutaneous application of camphor containing substances is common route of toxicity. Exploratory ingestion is most common among children less than 6 year age accounting for around 80% of all exposures. Acute camphor toxicity cause gastrointestinal irritation and central nervous system depression in low doses and severe toxicity presents with muscle fasciculation, hallucinations and seizures.(1,2) Inhalation camphor toxicity is not reported commonly.

CASE DESCRIPTION

6 month old male infant who presented to community hospital in rural region who exposed to raw camphor tablets tied to his arm and legs as bracelet and anklets by grandmother in view of prevention of viral infection(during corona virus pandemic). Child who was breast-fed, born without any perinatal complications, normal development as per age, presented with loose stools, not containing mucus or blood, also had vomiting, and lethargy since last 8 hours. There was no history of fever and seizures. On examination, child was hemodynamically stable with patent airway and breathing. He was awake but drowsy. Rest of CNS examination was normal.

Abdomen, respiratory system and cardiovascular system was normal. Hemogram, renal function test and liver function test showed no abnormality. Child was kept nil orally and started on maintenance fluid and kept under observation. During hospital stay, child symptomatically improved and become fully conscious within 8 hours. Child was gradually allowed orally and he started accepting feed, tolerated well and discharged to home.

DISCUSSION

Camphor is very commonly available household substance which is used in religious ceremonies, as insect repellent, also used in various Ayurvedic medicinal products for inhalation in upper respiratory tract infections. It is also used in various pain relieving topical gel, in vaporizers, as air fresheners, for abdominal discomfort etc or sometimes also used to decrease libido(1). Camphor content in medicinal products is restricted to <11% by US food and drug administration, but not regulated in India (2). Also widely available camphor balls or cakes make children vulnerable for acute camphor poisoning. Camphor is a toxic substance, even ingestion of small amount can be fatal. It is colorless volatile substance which sublimate from solid to gas on exposure to air. It is common belief in Indian population that camphor sublimate in air are highly protective against common cold and upper respiratory tract infections. Hence, its use also increased during pandemic of corona virus. Inhalation camphor toxicity is rarely reported, although camphor toxicity by ingestion is most common.(3)

Seizure is most common reported manifestation of camphor toxicity.(2,4) They manifest as new-onset seizures in a previously non epileptic child which may progress to status epilepticus. Site of action of camphor is cytochrome oxidase system. Severe anoxia in the neurons noted in post mortem changes.(5)

Camphor when taken orally gets absorbed rapidly through gastrointestinal tract with rapid action within 5-20 min and starts causing symptoms like vomiting, loose stool, abdominal pain, decrease in sensorium and peak effect occur around 90 min at neurotoxic dose of >50 mg/kg causing seizure and fasciculations. Dose around 500 mg/kg body weight would be fatal. (3,4,6) Dermal absorption is less severe compared to systemic ingestion. Dermal effects of camphor post dermal absorption include erythema, local irritation and dryness. However, inhalation toxicity is not reported yet.

Strong smell from the breath, nausea, vomiting, and abdominal pain are initial clinical features of camphor ingestion. However, agitation and seizures may be the first sign with which patient present in emergency. (4,5)

Management of camphor toxicity should include stabilizing the airway, circulation and breathing support. Decontamination of skin and continuous monitoring in intensive care warranted. There is no role of gastric lavage or activated charcoal for camphor poisoning as per American Association of Poison Control Centre.(7) Benzodiazepines should be used for seizure control.

CONCLUSION

Camphor preparations are commonly available in Indian household. Belief like camphor prevents from respiratory tract infections and exposure of unregulated raw camphor to infants can lead to dreadful consequences. Hence, awareness about potential toxic and lethal effect of raw camphor products should be raised among general population. Camphor balls if kept in home should be placed in jar or bags which should be kept away from the reach of children. Also, child presenting with acute seizure without known cause or with acute altered sensorium, camphor poisoning should be listed in differential diagnosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity.

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