

Camphor Induced Seizures in an Adult- A Revisit

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Received date: July 17, 2018; Accepted date: September 26, 2018; Published date: September 30, 2018

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Abstract

In Nineteenth century camphor was produced by distillation of the tree bark of camphor (*Cinnamomum camphora*) however now a days it is obtained artificially from oils like turpentine [1]. Camphor is used to relieve pain, coryza, haemorrhoids, osteoarthritis and is an ingredient in of many over-the-counter drugs [2]. In India the most popular use of camphor still remains in the spiritual prayers and pujas offered daily even in an ordinary household. Seizures can occur as soon as minutes after ingestion of camphor. Seizures associated with camphor have been reported in young children after accidental ingestion, dermal, and inhalational exposure. We report a case of camphor self-ingestion in an elderly female who experienced generalized tonic clonic convulsions with no previous history of seizure disorder. On evaluation she had no other plausible explanation for seizures but for camphor toxicity. She was treated supportively with no seizure recurrence.

Keywords: Adult; Camphor poisoning; Ingestion; Seizures

Introduction

Camphor is cyclic ketone of the group of hydroaromatic terpene compounds. It has been proven to be harmless when used in low concentrations (0.2 to 12%). The strong pleasant aroma of camphor has led to its use in many oils, ointments and inhalants as a remedy for coryza and sore throat. It is an ingredient of many preparations available over the counter (pain-relieving antiseptic liquid, cold sore therapy ointment, balms, vapor patch, chestrub, muscle and joint cream, camphor-phenol oral rinse etc.) because of their wide usage and easy availability, it can be a source of an easily available household poison and can be used as a suicidal agent. Generalized tonic-clonic convulsions are a documented complication of camphor toxicity and are reported after inhalation, ingestion and skin exposure. Other central nervous system effects, including agitation, confusion, myoclonus, hyperreflexia, lethargy and even coma has been observed in cases with camphor poisoning in adults [3]. Camphor poisoning is rarely reported as a cause of seizures in adults, although few cases have been reported in children [4]. Hence we are reporting a case of Seizures in Suicidal ingestion of camphor.

Case Report

Two hours after ingestion of around 20 grams of camphor in a form of tablets, used for spiritual purposes, a 65 year-old lady presented to the emergency room with three episodes of generalized tonic-clonic seizures in a state of post ictal confusion and two episodes of vomiting. She was a known case of major depression off treatment with no past history of seizures. The vomitus smelled the aroma of camphor. She had history of similar suicidal attempts in the past. On examination she was conscious with Glasgow coma scale of 12/15, afebrile with normal pulse of 86/minutes and BP of 110/76 mmHg. She had no signs of focal neurological deficit and her systemic examination revealed normal findings. Gastric lavage was given and she was observed in ICU. Recurrence of seizures was not documented during hospital stay.

Haematological and biochemical tests including random plasma glucose, serum electrolytes, liver functions, serum calcium and serum creatinine were within normal limits for age. Arterial blood gas revealed saturations of 93.8% and pO₂ of 106.3 mmHg with SpO₂ of 98% at room air. She had leukocytosis of 13.7 cells/mm³. Her urine albumin was negative. ECG showed T inversions from V1 to V4 with normal cardiac biomarkers and 2D Echocardiogram. Computed Tomography scan of brain was done which revealed age related brain parenchymal changes (Figure 1). Electroencephalography was normal. She was managed symptomatically for 5 days in the hospital with no recurrence of seizures. Her Psychiatry consultation revealed bipolar disorder for which she was started on Risperidone. She was discharged with stable vitals and asked to follow up in OPD.

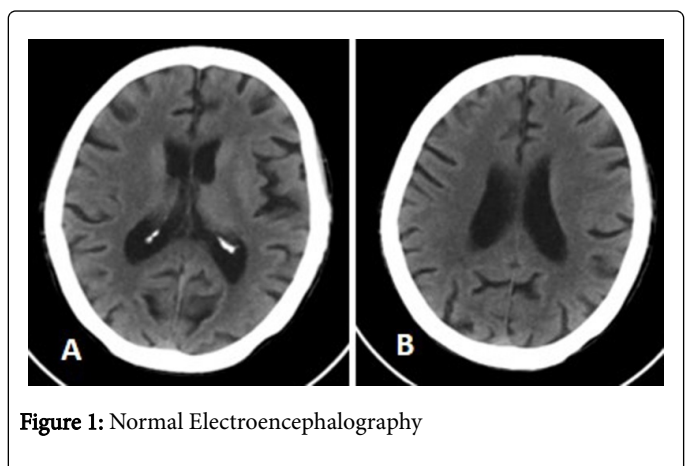


Figure 1: Normal Electroencephalography

Discussion

Camphor is a toxic substance that can be fatal on ingestion even in the doses of 30 to 50 mg/kg [5]. Camphor forms an important constituent of religious events and prayers in India and is a content of many oils and liniments [6]. Common clinical manifestations of

camphor poisoning are Seizure. Other known central nervous system effects include agitation, confusion, myoclonus, hyperreflexia, lethargy and even coma. The mechanism of action of camphor is the disruption of oxidation cycle at a phase above the flavoprotein cytochrome-b level of the cytochrome oxidase system inside the neurons [7]. This is suggested by post-mortem changes of the neurons in patients died of camphor poisoning.

In the literature, it has been reported that side effects do not develop in later hours, if no side effect is observed in the first four hours after ingestion irrespective of the amount [8]. If the dose ingested is 30 mg/kg and above, more severe side effects are observed. With consumption of camphor around 50 mg/Kg body weight, neurologic side-effects are common, with seizures being the most common manifestation occurring variably within 1.5 h after exposure [9]. Reported prevalence of camphor induced generalised tonic-clonic convulsions is around 6%. Other reported manifestations of camphor ingestion include lethargy, ataxia, nausea and vomiting.

The diagnosis of camphor poisoning can be made based on the typical clinical findings. Presence of camphor can be detected in both blood and urine, but testing is generally reserved for medico legal cases. Nonspecific laboratory findings of camphor toxicity include leukocytosis, proteinuria, and transient elevation in hepatic transaminases [5].

Management of seizures in camphor poisoning should be carried out in an emergency care setting as camphor, being lipid soluble absorbs very rapidly from gastrointestinal mucosa after ingestion. There are no recommendations from The American Association of Poison Control Centre for the use of either activated charcoal or gastric lavage after camphor ingestion. Benzodiazepines are drug of choice for seizures in camphor poisoning.

Cardiac involvement with myocarditis with camphor ingestion has also been reported [10]. Proper toileting of the skin with soap and water should be done in patients with dermal exposure of camphor. Those who remain asymptomatic after four hours of ICU stay can be observed at home safely.

In our patient generalized tonic-clonic seizures occurred three times after ingestion of camphor. The seizures were controlled with Lorazepam. There was no evidence of hypoglycemia, dyselectrolytemia, stroke, space occupying lesion, intake of any seizure provoking drug, alcohol ingestion or encephalitis being the possible cause of seizures. Camphor ingestion was the best possible explanation for the seizures occurring in this woman.

Novelty

Though few reports of seizures after camphor poisoning are documented after accidental exposure in children, there are hardly any documented reports of seizures after suicidal consumption of camphor in adults in India, in spite of the ease of availability.

Limitation

Camphor can be detected in both blood and urine, but testing is generally reserved for forensic cases because these studies are not readily available at most health care facilities as in our Institute [5].

Conclusion

Accidental exposure to camphor is a common phenomenon causing seizures in children. As camphor is readily available in the households, camphor poisoning should be suspected as a differential diagnosis of seizures in otherwise healthy adults. Relatives should be questioned regarding a possible exposure of camphor products in the few hours before the event of seizures.

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