



Camphor Ingestion : An Unusual Cause of Seizure

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Abstract

Camphor is a pleasant smelling cyclic ketone with propensity of causing neurologic side-effects especially seizures. We report two patients who after inadvertent consumption of camphor experienced an episode of generalized tonic clonic seizure. These cases highlight the importance of enquiring any intake of material (medicinal or otherwise) in every patient presenting with seizure. ©

INTRODUCTION

Camphor is a pleasant smelling cyclic ketone of the hydroaromatic terpene group. Its history dates to ancient Chinese medicine and has been used as an aphrodisiac, anti-aphrodisiac, contraceptive, abortifacient and suppressor of lactation.¹ It was originally obtained by distillation of bark chips from the camphor tree *Cinnamomum camphora*; nowadays it is synthesized chemically and used in cold remedies.

Despite medical experts and committees having discussed its questionable medical benefits and warnings about its potential toxicity, several over-the-counter camphor compounds continue to be manufactured and marketed.

Although the vast majority of reported cases of camphor toxicity are due to accidental oral ingestion especially involving the pediatric age group, a few case reports suggest absorption through inhalation, nasal instillation and through the skin (practice of "Cao Gio" or "coining"),² as well as suicidal intake. Alternative systems of practice of medicine have long been present in India and we would like to draw attention to potential harmful consequences of one such practice seen in one of our patients.

CASE REPORTS

A 22 year old gentleman, presented to us in a state of altered consciousness, after an episode of generalized tonic clonic seizure. There was history of intentional consumption of camphor with banana in order to relieve him of some gastrointestinal ailment, as advised by a practitioner of traditional medicine. Despite unpalatability, this combination was consumed,

which contained around 4.5 grams of camphor. This was followed by sense of restlessness along with nausea, headache and an episode of generalized tonic clonic seizure with upturning of eye balls and loss of consciousness after about one hour of ingestion of the concoction. Post-ictal confused state lasted for approximately 30 minutes. He was a normotensive, non-diabetic person with no history of headache, focal neurologic deficit, seizures in the past, fever, trauma and exposure to any other drug or toxin.

Neurological examination did not reveal any abnormality. Electroencephalography and imaging of brain were normal, as were the metabolic parameters. He had mild malaise for 1 week. The patient has been asymptomatic in 9 months of follow up.

Our second patient was a 4 year old mentally retarded girl, suffering from Pica, who out of her inappropriate feeding habits consumed camphor kept for worship. Approximately half a tablet (~1.5 grams) had been consumed, an hour subsequent to which she had a generalized tonic clonic seizure followed by loss of consciousness for half an hour. Neurological examination, electroencephalography and imaging were within normal limits. Follow up has been unremarkable.

DISCUSSION

There is marked paucity of data regarding camphor toxicity in India. The literature abroad is however replete with case reports and incidents of camphor intoxication in children especially with respect to usage of camphorated oils. Adults owing to either awareness or a large body surface area have only rarely been involved in camphor intoxication. Practice of "Cao Gio" and suicidal intents have the major source of intoxication in adult population. "Cao Gio" is a dermabrasive therapy in which the skin is first lubricated with medical oils or balms, containing camphor, followed by firm rubbing usually with the edge of a coin to produce parallel

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ecchymoses on the chest and the back. This therapy is most commonly used by Cambodians and other ethnic groups from Southeast Asia to relieve symptoms in a variety of illnesses.

The site of action of camphor is supposed to be intraneuronal and upon 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.³ With significant ingestion of camphor (>50 mg/kg body weight) neurologic toxicity is common, with generalized tonic clonic activity being the most prominent manifestation occurring variably from 5 to 90 minutes after exposure. Our cases had consumed camphor in doses of about 85 and 75 mg/kg body weight, respectively, with resultant seizures approximately 1 hour after ingestion, and recovered completely with supportive treatment.

It is notable that since camphor is rapidly absorbed after ingestion from the gastrointestinal tract, neither activated charcoal nor gastric lavage is helpful. Given the high propensity of seizure occurrence, these maneuvers may rather prove harmful for the patients. The American Association of Poison Control Centre⁴ does not therefore recommend their use. It also states that those who remain asymptomatic after 4 hours

of exposure can be safely observed at home and that benzodiazepines should be used for control of seizures. Because of camphor's highly lipophilic nature, extracorporeal procedures to remove the toxin from the body are of questionable benefit.

Our first case is a unique example of camphor intoxication having occurred after therapeutic consumption for gastrointestinal ailment as part of alternate practice of medicine done in this part of the world. It also emphasizes the potential hazardous nature of this chemical especially when used inadvertently. These cases point to the importance of enquiring about prior intake of material (medicinal or otherwise) in every patient presenting with seizure and that their household availability may be deleterious.

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Obituary



Dr. MV Govindappa

The sudden demise of Prof. MV Govindappa, affectionately called MVG on 11th Dec 2007 has left a deep void in the field of Clinical Medicine. His students, patients and family members are still shell shocked at this most unexpected event. I was indeed fortunate enough by being a student of Prof MVG both at UG and PG levels 38 and 28 years ago, and what I am today is only because of his guidance and there are scores of doctors who have been benefited by benevolence. Dr. MV Govindappa was born in a poor agricultural family of Gouribidanur in the year 1934. He had a brilliant academic career at Mysore Medical College from 1952-58. He was the best outgoing student of the college and won various gold medals and prizes. He joined Govt service as an Assistant Surgeon in 1958 and was a part time lecturer in Internal Medicine in MMC. He had his MRCP from Edinborough during 1963-65 and after his return worked as Asst Professor, Reader, and Prof of Medicine in various Medical colleges of the state and was Prof and HOD medicine at Hubli Med College in 1984 when he took voluntary retirement. He was both a UG and PG examiner of various universities of Karnataka, Andhra Pradesh and Tamilnadu. He worked in JSS Med College for 5 years and was working as a Consultant at BM Hospital Mysore till his death. He has a son who is also a Consultant in Internal Medicine and a daughter.

The value of Prof MVG and his teachings was known to all his students when he was alive itself. He was a wonderful teacher of Clinical Medicine and in an era of minimal investigations his uncanny ability of arriving at a diagnosis was flawless. He was a very sportive examiner and always considered the ability of the student in giving a pass and nothing else. He always respected his patients and his students and spoke to them with dignity. Although some of his students considered him as short tempered, students close to him knew that he was annoyed by the mistakes committed by them. He was always meticulously dressed and highly disciplined and humane. His departure is an irreparable loss to medical profession in general and to his students in particular. May his soul rest in peace.

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