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REPORT OF TWO INFANTS WITH SEIZURE DUE TO *SAGE OIL*

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ABSTRACT

Essential oils are a kind of herbals and they are commonly used for various purposes. In this article, we report a 17-month-old and a 10-month-old boys, presented with generalized tonic-clonic convulsion after taking sage oil (an essential oil made from the herb sage, *Salvia officinalis*). The first boy's mother had given to him two teaspoons of sage oil for making the child comfortable an hour before admission. Neurological examination was normal. After admission to the emergency department, he has vomited and a generalized tonic-clonic convulsion, lasting 3 min, occurred. The seizure was controlled with rectal diazepam. Seizures did not recur during his follow up. Electroencephalography was also normal. The second boy's mother had given to him one-to-two ml of sage oil instead of vitamin D3 at the night. He has twice tonic-clonic convulsions after four and five hours taking sage oil. His convulsions had controlled by rectal diazepam and intranasal midazolam, respectively. On account of those cases we would like to emphasize that Sage Oil may cause seizure in infants.

KEYWORDS: *Salvia officinalis*, sage oil, seizure, infant, diazepam, midazolam.

INTRODUCTION

An estimated 77% of parents use herbal theraphy in Agean area in Turkey. They use herbals to make their child comfortable, to support medical treatment, to promote health and prevent disease or to reduce side effects of medical treatment.[1] In 2012, 1490 tons of dried sage leaves were exported from Turkey. Additionally, about 300-500 kg of sage essential oil are produced annually in Turkey.[2] However, some herbals can cause important side effects.[3]

In this article, we report of an infant with seizure due to Sage Oil (an essential oil made from the herb sage, *Salvia officinalis*) because of rare presentation.

CASE REPORT 1

A 17-month-old boy was presented with generalized tonic-clonic convulsion. His mother had given to him two teaspoons of sage oil making the child comfortable an hour before admission. The duration of seizure was approximately 5 min. His mother also applied sage oil to his abdomen and soles for making her child comfortable daily since when he was 40-day-old. She licked him the oil sometimes. He was born at term after an uncomplicated pregnancy and delivery. There was no history of fever, trauma, metabolic disorder, or seizures in the patient; nor was there a family history of seizures and epilepsy. His developmental milestones were normal.

On physical examination, rectal temperature was 37.3 °C, heart rate 120 beats/min, and respiratory rate 40 breaths/min, and. Neurological examination was normal.

On laboratory investigation, blood glucose was 211 mg/dL. Serum electrolytes, liver and renal function tests were normal. Cranial magnetic resonance imaging showed cavum velum interpositum variation. Electroencephalography was also normal.

After admission to the emergency department, he has vomited and a generalized tonic-clonic convulsion, lasting 3 min, occurred. The seizure was controlled with rectal diazepam. He was hospitalized for further investigation. A detailed history revealed that the patient was given two teaspoons of sage oil an hour before the onset of seizures. The seizure did not recur during hospitalization. On the 2nd day of hospitalization, he was discharged from the hospital because he was symptom free.

After discharge, he was healthy. Control blood glucose level was normal.

CASE REPORT 2

A 10-month-old boy was presented with generalized tonic-clonic convulsion. His mother had given to him one-two ml of sage oil instead of vitamin D3 four hours before admission. The duration of seizure was approximately 15 min.

He was born at term after an uncomplicated pregnancy and delivery. There was no history of fever, trauma, metabolic disorder, or seizures in the patient; nor was there a family history of seizures and epilepsy. His developmental milestones were normal.

On physical examination, rectal temperature was 36.8 C, heart rate 110 beats/min, and respiratory rate 45 breaths/min. Neurological examination was normal.

On laboratory investigation, blood glucose was 115 mg/dL. Serum electrolytes, liver and renal function tests were normal.

After admission to the pediatric department, he has a generalized tonic-clonic convulsion, lasting 3-4 min, occurred. The seizure was controlled with intranasal midazolam. The seizure did not recur during hospitalization. On the 2nd day of hospitalization, he was discharged from the hospital because he was symptom free.

After discharge, he was healthy. A child neurology consultation was obtained. Neither Magnetic resonance or nor electroencephalogram suggested.

DISCUSSION

Salvia officinalis (Sage) is a perennial herb known as astringent, antispasmodic, carminative, antiseptic, and antihydrotic properties.[4]

Sage oil is an easily available drug at herbalists in Turkey. It is used as gas expectorant, antiperspirants, urine enhancer, wound healer and antiseptic. It can be used locally to skin or orally. Our case was used it orally for making the child comfortable.

Burkhardet al.[3] reported three cases of plant-induced seizure. A survey of the literature shows essential oils of 11 plants to be powerful convulsants (eucalyptus, fennel, hyssop, pennyroyal, rosemary, sage, savin, tansy, thuja, turpentine and wormwood) due to their content of highly reactive monoterpene ketones, such as camphor, pinocamphone, thujone, cineole, pulegone, sabiny-lacetate, and fenchone.[3]

Variations in the essential oil composition of sage were studied using capillary gas chromatographic methods. A total of 40 components were identified. The principal components in the sage oils were 1,8-cineole, camphor, α-thujone, β- thujone, borneol, and viridiflorol.[5]

Halicioglu et al[5] have reported 2 cases, those of a newborn and a toddler, who experienced generalized tonic-clonic seizures after accidental exposure to sage oil. Our case also had generalized tonic-clonic seizures.

S. Gündüz et all reported 4 cases of sage oil intoxication because of application of sage oil used for infantile colic.[6]

In conclusion, on account of this case we would like to emphasize that *Sage Oil* may cause seizure in infants; therefore, parents should be advised about adverse reactions of *Sage Oil.*

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