

Shoe-smell Application as a First-aid Interventional Measure in Controlling Epileptic Attacks in an Urban Population in India: A Fortuitous Empirical Finding

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Abstract

Diseases possessing long history of existence have been associated with various kinds of interventional (pharmacological and non-pharmacological) measures adopted by the patients or their caretakers in attempt to abort or attenuate the severity/intensity of the disease. One such disease is epilepsy, which has been known for thousands of years. This disorder is known to be associated with trigger factors and their self-perception and has been subjected to a wide range of remedial interventions. One such remedial measure, which has persisted for centuries in India, is application of shoe-smell in controlling the epileptic attacks. The present study was primarily conducted to survey the prevalence of trigger factors and their self-perception in the patients with epilepsy seeking medical advice at a tertiary epilepsy center. The study also included questionnaire on adoption of any interventional measures by the patients or their caretakers. The prevalence of application of shoe-smell emerged as a fortuitous finding; surprisingly, it was also claimed to be highly effective in limiting the duration of the epileptic attacks. Although, not intended to promote this remedial measure, the study underscores the importance of a larger, well-designed study for an insightful exploration of the prevalence and effectiveness of this measure, which persists even today in India despite its denouncement as a myth.

Introduction

India is known for its rich heritage, traditional history and diversified culture. This also includes traditional remedial measures, some of which continue to be practiced even today despite absence of supporting factual and/or scientific evidence. However, not all practices are without underlying scientific rationale. One such practice has been the application of "shoe-smell" in controlling or arresting epileptic attacks, which unfortunately has been condemned and labeled

as a "myth" without even attempting to reach out to its possible scientific roots. But, despite the vehement condemnation, it is generally believed that this remedial measure continues to be in practice, largely in rural regions of India even today. However, surprisingly, this practice has emerged as a fortuitous finding in the form of first aid remedial measure against epileptic attacks even in urban population in an ongoing study being conducted for survey of trigger-factors in patients with epilepsy at a tertiary epilepsy center.

Justification of the survey-study

A number of studies [1-4] have reported high prevalence (62-90%) of self-perception of seizure-precipitants (trigger-factors). In one study [3], 47% of study-patients were even able to prevent their attacks at some time. In view of this behavior pattern coupled with the idea that self-perception of seizure-precipitants may be potentially associated with multidimensional significance in framing management protocol of the patients with epilepsy, a study was initiated to determine the prevalence of self-perception of seizure precipitants in such patients in an urban population of India. The study-questionnaire also included any interventional measure(s) adopted to arrest the progress of the seizure attacks in view of available literature that patients with epilepsy or their caretakers often resort to adoption of various interventional measures in attempt to arrest the progress of an epileptic attack

Methodology

32 patients (19 males and 13 females) with mean age of 22.22 years (SD= 13.61) were included in the study. The mean duration of epilepsy was 3.81 years (SD=8.78). The patients were questioned for self-perception of seizure-precipitants and any

interventional measure(s) adopted by them or their caretakers in attempt to abort or arrest the seizure attacks. None of the patients was on anti-epileptic treatment.

Three patients admitted to being subjected to the application of shoe-smell and one to socks-smell (for practical purposes all these four patients have been included in one group). The other 28 patients were not subjected to any interventional measure(s). Of the four patients who were subjected to shoe-smell, three had generalized tonic-clonic convulsions while the fourth had focal seizures with secondary generalization. Unfortunately, due to economic constraints, no neuroimaging tests had been undertaken and therefore, typing of epilepsy was not asserted.

Results

Relief in the form of marked diminution of the duration of the attacks was observed in all the four patients who were applied shoe-smell at the onset of their attacks. In three patients, the shoe-smell was effective in limiting the duration of the attacks from un-intervened duration of 25-30 minutes to 15-20 seconds. In the fourth patient, there was diminution of the duration to less than 10 minutes. Avoidance of shoe-smell application on medical advice resulted in returning of the duration of the attacks to 25-30 minutes or more in all the four patients.

Since, the remaining 28 patients were not subjected to any form of intervention, the possibility of some other patients also having responded to shoe-smell to a variable extent cannot be ruled out.

Discussion

Aromatherapy is an age-old form of remedy with proved efficacy in several neurological conditions owing to its influence on limbic system especially amygdala. Current research also is directed to study the influence of olfaction (sniffing) on various aspects of human behavior by neuroimaging techniques and epilepsy is viewed as a behavioral disorder due to altered electrical activity.

A sound scientific theory has been published recently [5], which attempts to explain the underlying basis of the efficacy of shoe-smell in controlling epileptic attacks.

The theory is based mainly on the relation between olfaction and the temporal lobe [the region most

commonly inflicted in epileptic disorders in the form of temporal lobe epilepsies (TLE)]. An inherent relation between smell and TLE especially uncinata seizures is known to exist for a long time, uncus being phylogenetically a part of the olfactory brain. Olfactory auras and hallucinations are often found to accompany temporal lobe seizures [6-7]. Further, the proximity of olfactory areas with the regions involved in TLE seems to be directly responsible for failure of the neuronal synchronization, which is required for generation of epileptic activity, due to olfactory stimulation [5]. Several earlier studies have also reported seizure control by olfactory stimulation. [8-12].

Further, a possible theory attempting to shed light on the origin and evolution of this remedial measure to its present form has also been put forward [13].

Conclusions

This brief study is not intended to promote the application of shoe-smell as a remedial measure for controlling epileptic attacks; it is merely an attempt to bring its prevalence and claimed-efficacy into light and in view of which it is strongly recommended that a larger and wider study be conducted to study this form of therapy and its effectiveness in patients with epilepsy with modern designing and corroborative neuroimaging studies for a more comprehensive assessment of its prevalence.

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