

Case report

First Episode Psychosis and Lavender Exposure: A Case Report

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Abstract

First episode psychosis is a clinical presentation of new-onset delusions, hallucinations or paranoia. Despite extensive research in schizophrenia and bipolar disorder, little is known about the role of environmental toxins in psychosis or direct neurotoxicity. Lavender oil is a naturally occurring substance that has been used for centuries for its anxiolytic effects and research is currently underway that will help us understand its effect in treating anxiety disorders. Neurophysiologic changes in animals have been described, but it is not known whether or not lavender exposure can lead to neurotoxicity in humans. This case report describes a case of a young, healthy woman that developed neurotoxicity temporally-linked with an exposure to a large dose of essential lavender oil. After soaking in a bath with concentrated lavender oil, the patient developed acute dermatologic and anxiety symptoms which progressed to delirium. Within a few days she developed catatonic psychosis for one month with multiple hypodensities in brain magnetic resonance imaging. She experienced slow resolution of her symptoms of the following five months and remained symptom-free for at least one year at the time of this writing.

Keywords: lavender toxicity, first episode psychosis, essential oils, neurotoxicity, demyelination

INTRODUCTION

Lavender oil is a naturally occurring substance from a number of species that has been used for its anxiolytic effects for centuries.¹ Current research is attempting to determine its role in anxiety disorders.^{2,3} It has been associated with allergic dermatitis and supraventricular tachycardia in humans and neurophysiologic changes in animal models, such as alterations in serotonin concentration in the prefrontal cortex and sedative-hypnotic effects.⁴⁻⁷ It is unknown whether or not lavender exposure can lead to neurotoxicity in humans.

Most patients presenting with the first episode of psychosis (FEP) without neurological finding on exam do not warrant cerebral magnetic resonance imaging (MRI) or computed topography (CT).⁸ Less than 5% of these patients can be expected to have organic brain disorders such as tumors or HIV encephalopathy that would require a change in clinical management, though up to 65% may have incidental findings such as small vessel ischemic disease.⁸ Understanding this rarity, we present a case of apparent demyelinating lesions on a brain MRI in the setting of FEP without neurological findings after excessive lavender exposure.

CASE PRESENTATION

The patient is an 18-year-old Hispanic woman with no past psychiatric history who presented on transfer from an outside hospital with psychosis and catatonia. The patient had been in her usual state of health approximately 10 days before transfer. She had no prodromal symptoms consistent with new onset schizophrenia. She was socially active, outgoing and had multiple scholarships to choose from as she was about to graduate high school with honors. There was no history of substance abuse or pathologic personality traits.

Further history revealed that three days before the onset of her symptoms she had taken a bath with lavender oil. The lavender solution was in a very high concentration that was intended to be aromatic only and not to come in contact with the skin. Within 10 minutes in the bath water, her hands became pale from the wrists, inferiorly. She developed anxiety and her torso developed an erythematous, diffuse and blanching rash. The symptoms subsided that evening; but two days later, she developed a progressive delirium and was taken to an outside hospital and admitted. There, she worsened with psychosis characterized by hallucinations, delusions and catatonia, refusal to eat or drink.

Upon transfer to Baylor Scott and White hospital, laboratory studies, including comprehensive metabolic panels, urine drug screening and cerebral spinal fluid analysis were normal. Her brain MRI revealed multiple hypodensities consistent with demyelination (see Figure 1). Neurologic exam was normal, though limited by some lack of coordination as a result of catatonia. She remained in the hospital for five weeks, largely due to refusal to eat or drink. After fluid resuscitation and coaxing with potato chips, she began to improve on olanzapine oral dissolving tablets and was discharged home with her parents. She gained a significant amount of weight and was switched to aripiprazole, but her psychotic symptoms continued to improve until they resolved completely by five months of treatment. At the time of this writing, she had been symptom free for over one year.

DISCUSSION

This is the first case report of psychosis after lavender exposure, to our knowledge. Unfortunately, causality is impossible to accurately determine. Another limitation with this case report is the relatively short follow-up period of one year. A longer observation period may detect future psychiatric morbidity.

It is important to establish a good rapport with paranoid, psychotic patients in order to obtain a thorough history. Patient attitudes toward the use of medication can affect non-adherence rates, particularly if the patient is paranoid or doesn't believe they have a true psychotic illness.⁹

Although MRI is not routinely obtained in first episode psychosis, consider a broad differential diagnosis when the prodromal psychotic syndrome is absent. Working with the patient and family collaboratively to find a cause for the psychosis may help reduce medication non-adherence, which is a significant barrier to therapy in psychosis and is associated with relapse in first-break schizophrenia.^{10,11}

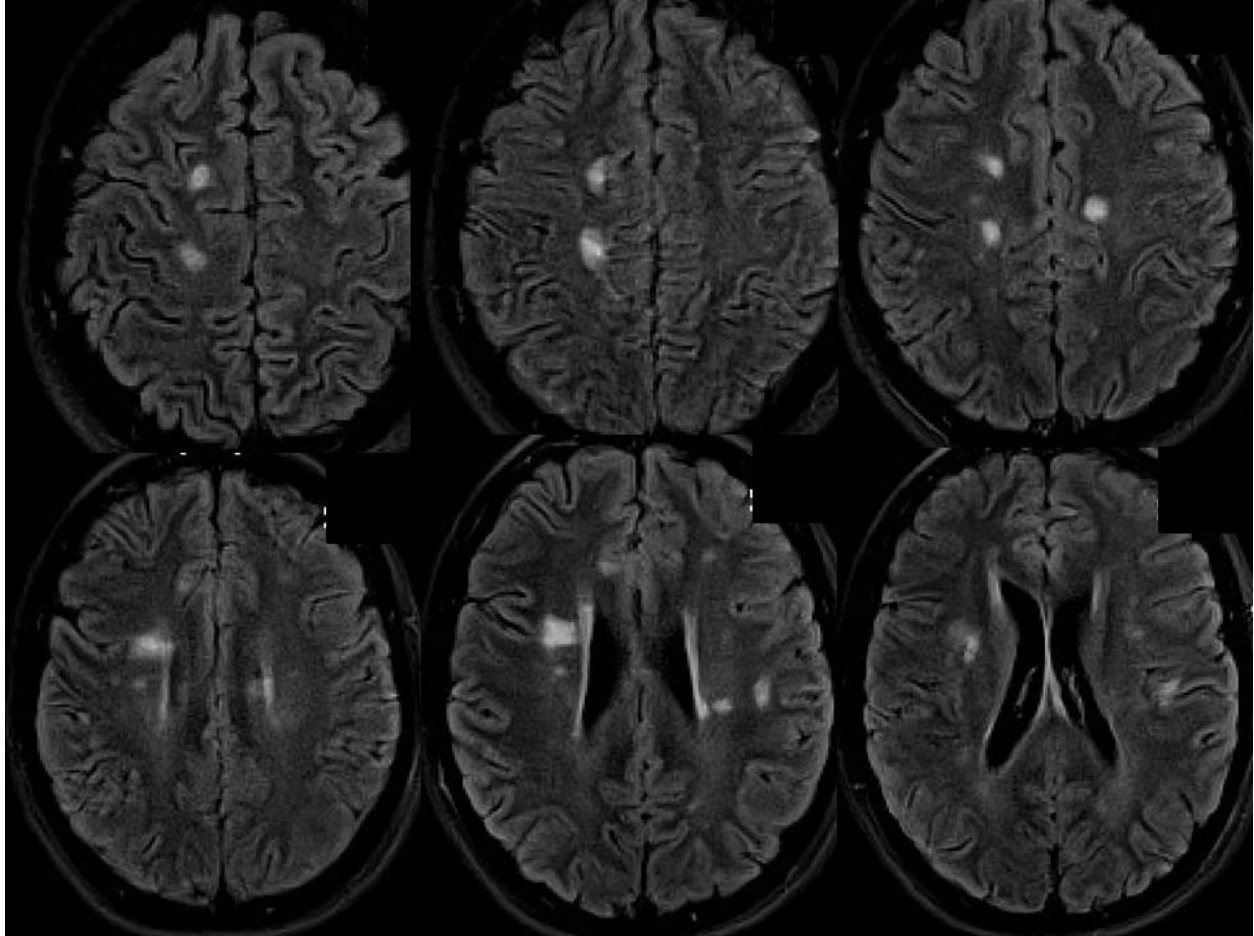


Figure 1: Axial brain images in a patient with the first episode of psychosis using magnetic resonance imaging.

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