

## Case Report

# Bath Salt Induced Psychosis: A Clinical Challenge

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## Abstract

Bath salts are a new group of emerging drugs that contain cathinone derivatives and have stimulant-like properties. These drugs are becoming popular as drugs of abuse and have been shown to cause not only medical complications but also induce psychotic-like symptoms in people with no previous psychiatric disorder. Few cases in the literature have shown various psychotic symptoms produced by the use of bath salts as well as treatment options for these patients. This case involves a 19 year old male patient with no prior psychiatric history who presented with symptoms of paranoia, agitation, ideas of reference, grandiosity, hallucinations and disorganized behavior. Urine toxicology was negative however collateral information revealed the recent use of bath salts in the patient. The patient was treated with low-dose anti-psychotic medication to help diminish symptoms. It is important for physicians to be aware of the use of synthetic drugs and recognize the psychiatric effects of these drugs. The use of anti-psychotic medication to minimize symptoms in acute and long-term settings will be discussed.

**Keywords:** Induced psychosis; Bath salts

## Introduction

Designer drugs are an emerging alternative to the use of traditional illicit drugs. Bath Salts, which contain cathinone derivatives, a monoamine alkaloid, are one of the common designer drugs [1]. There is a growing concern among health care providers about its use in the general population. Bath Salts act on the dopamine, serotonin, and norepinephrine transporters in the brain and thus have stimulating properties that can activate the sympathetic nervous system. This activation can result in various medical emergencies including tachycardia, hypertension, hyperthermia, myocardial infarction, and death, as well as psychiatric symptoms including psychosis and agitation [2].

## Case Presentation

This is a case of a 19 year old single, unemployed, African American male who was living with his adoptive Mother and Father and moved to live with his biological Aunt before admission. As per the family the patient was last at his baseline approximately 2 months before admission. He was brought to the emergency room by EMS activated by family due to disorganized behavior including walking naked at home and making illogical statements.

The patient had one prior admission a few weeks prior to this. At that time he was using cannabis and bath salts and engaging in strange and risky behaviors such as breaking into stranger's cars and stealing. He was also illogical in speech. During this admission he was prescribed Zyprexa, Depakote and Klonopin. He reported seeing a child psychiatrist during his high school years due to acting out and getting into fights at school but was never on any medications. The patient reported using cannabis daily. He initially denied the use of other substances. Prior records reported that he admitted to using bath salts, which was also confirmed by the family. The patient reported no previous suicide attempts, did not know of any family psychiatric history, and had no medical issues and no allergies.

On admission to the unit the patient was disorganized in thought and behavior, he was dramatic and expansive. He had grandiose delusions of being 'a very important person like Superman and Spiderman' and reported having special powers. He wore his gown like a cape and had his sheet wrapped around his head with the remaining material trailing behind him. His speech was pressured; he was irritable, loud, stated that he could "walk forever" and reported difficulty sleeping. His thoughts were illogical, tangential with loose associations, responding to internal stimuli and laughed inappropriately at times. He also reported playing football with Adam Sandler. He reported being able to see God, who is a shadow and wears a cowboy hat. He reported being able to communicate with God and that he could also control things with his mind. When asked about his previous admission he stated that his family set him up, referred to his brother as an undercover cop and also reported that the Illuminati was involved. He denied suicidal/homicidal ideation as well as hallucinations of any type. He was started on Risperdal which was titrated up to 2 mg twice a day. After 3 days there was a noticeable difference in his symptoms. He became less dramatic and expansive and less disorganized in behaviour. He no longer believed he was 'very important' and was no longer walking around the unit with a cape. He was better able to acknowledge that drugs may have been a part of his actions and thoughts and was able to think linearly. He admitted to using bath salts closer to the end of his admission.

## Discussion

Illicit drug use in the United States has been significantly increasing nationwide. The National Institute on Drug Abuse reports an 8.2 percent increase between 2002 and 2012 [1]. Although health care providers are familiar with the common illicit drugs used nationwide, there are newer synthetic drugs that are being developed and are becoming more common among users. Bath Salts include many different drugs known to have stimulant-like properties. While Mephedrone is considered legal in the United States, MDPV

is considered a controlled-substance in some states and was sold legally in others in 2010 [3]. These drugs can be used by multiple methods including smoking, snorting and injecting. Both drugs result in similar effects and may present with medical and psychiatric sequelae including: rapid heartbeat, sweating, seizures, depression and perceptual disturbances [4]. These effects typically last between 2-4 hours, with increase in heart rate and blood pressure lasting up to 8 hours in some users [3].

There have been several cases in the literature reporting acute toxicity of bath salts as well as severe behavioral and psychological effects. These effects include delusions resulting in self-harm or harm to others, extreme paranoia and suicidal ideation [5]. There have also been reports of toxicity resulting in severe medical complications requiring admission to intensive care units [6].

Psychiatrists are well aware of the traditional illicit drugs used nationwide, however there needs to be an increasing awareness of the newer synthetic designer drugs that are now readily available in the community. Use and abuse of these drugs is resulting in increased psychiatric symptoms, and thus the awareness allows providers to target the treatment of the patient. Since these drugs do not show up in routine drug screening methods it is important for psychiatrists to specifically ask their patients about using them.

Upon thorough review of the case the patient presented with bizarre delusions, agitation and paranoia and it was difficult to decipher between new-onset psychosis and drug abuse. Initially the patient denied substance use, guiding the treatment team to think this was solely a psychotic disorder. However on further questioning of both the family and the patient it was evident that he was using a

synthetic bath salt. This information allowed the treatment team to change the treatment and cater to the patient regarding his substance use. Low dose use of an anti-psychotic was indicated in this case and resulted in a rapid improvement in symptoms in a short period of time. This further confirmed substance-induced psychosis as a cause for symptoms in this patient. Further information regarding the patient's progress after discharge was not available as he was lost to follow up.

## Conclusion

In conclusion, the use of synthetic drugs is on the rise in the United States. This case aims to add to the growing literature about substance abuse and psychosis, especially with the use of newer synthetic drugs, as well as to bring awareness to providers and allow for thorough history taking when evaluating patients.

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