

CASE REPORT

Methamphetamine Toxicity Secondary to Intravaginal Body Stuffing

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ABSTRACT

Background: People who ingest packets of illicit drugs or insert them into body cavities in an attempt to smuggle them are termed body packers. People who do this in an attempt to hide the drugs when encountered by law enforcement are called body stuffers. Severe toxicity and death occurs in body packers and body stuffers, and this is usually secondary to leaking of drug from packets in the gastrointestinal tract. This is well reported with cocaine and heroin and occurs less commonly with methamphetamine. We report an unusual case of intravaginal body stuffing that lead to severe methamphetamine toxicity in a young woman. **Case Report:** A 20-year old female, who was in police custody, developed multiple seizures, altered mental status, tachycardia and hypertension shortly after admitting to having drugs enclosed in plastic bags in her vagina. She was hospitalized for 4 days with gradual improvement in her symptoms with the exception of a resting tachycardia. Gas chromatography and mass spectrometry of the urine at this time confirmed the presence of methamphetamine and the amphetamine metabolite, co-intoxicants were excluded based on comprehensive urine drug screening using GCMS. Quantitative serum levels of methamphetamine and amphetamine were 3100 ng/ml and 110 ng/ml, respectively. **Conclusions:** We report an unusual case of intravaginal body stuffing that lead to severe methamphetamine toxicity in a young woman. This case highlights the potential for severe methamphetamine poisoning secondary to intravaginal stuffing. If either body packing or stuffing is suspected, a vaginal exam may be warranted.

Key Words: Methamphetamine; Intravaginal; Body stuffing.

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INTRODUCTION

Methamphetamine, known on the streets as "ice," "crank," "crack," "glass" and "speed," is easily synthesized requiring only rudimentary laboratory equipment and starting materials. Methamphetamine is inexpensive, readily obtainable, and has a longer duration of action than cocaine. These factors have contributed to its increase in popularity over the years.

Methamphetamine is readily absorbed by the oral, parental and inhalational routes, all of which may lead to severe toxicity. It is not uncommon for people to ingest drugs in an attempt to hide the drug from law enforcement officials in a process termed "stuffing." Although the drug may be encased in a package, body stuffing may lead to severe toxicity and death may occur. This is well reported with cocaine and heroin (1-5) and occurs less commonly with methamphetamine (6,7,9). We report an unusual case of intravaginal body stuffing that lead to severe methamphetamine toxicity in a young woman.

CASE REPORT

A 20-year old female, who was in police custody, told a police officer that she felt "strange." She then admitted to having concealed drugs enclosed in plastic bags in her vagina. While a female officer was helping her to retrieve the drugs the patient had a self-limited grand mal seizure. A broken bag with a crystalline-like substance was found in her vagina. A second seizure occurred en-route to the emergency department, and she presented unresponsive and apneic, requiring endotracheal intubation. Physical examination revealed a temperature of 99.2 degrees Fahrenheit, heart rate of 141 beats per minute, blood pressure of 144/31 mmHg, and oxygen saturation of 100% with bag valve mask ventilation. Neurological examination was significant for decerebrate posturing. The vagina was irrigated with normal saline and there was no evidence of foreign body. Laboratory examination revealed a negative pregnancy test, glucose 241 mg/dL, creatinine 1.3 mg/dL, sodium 143 mEq/L, potassium 3.4 mEq/L, Co2 17 mmol/L, and normal liver enzymes. Serum acetaminophen and salicylate concentrations were negative. White blood cell count was 15.8 K/mm³, hemoglobin 14.1 mg/dL, and a urine EMIT screen for drugs of abuse was positive only for amphetamines. Computerized tomography of the brain was normal. Electrocardiogram showed sinus tachycardia with a ventricular rate of 151 beats per minute. An arterial

blood gas revealed a pH of 7.24 and a base deficit of 11 mmol/L. The patient was given 50 mEq of intravenous sodium bicarbonate and was transferred to an intensive care toxicology referral center.

Two hours later, upon arrival to the intensive care unit, her vital signs were as follows: heart rate=132 bpm, blood pressure=135/79 mmHg, and core temperature=98°F. The patient was ventilated at a rate of 12 breaths per minute and oxygen saturation was 99% on 50% inspired oxygen. Pupils were 6mm bilaterally and sluggishly reactive, a small laceration was noted on the right lateral aspect of the tongue. Neurological examination was significant for agitation, intermittent myoclonic jerking of all four extremities, clonus and hyperreflexia. A vaginal examination revealed engorged labia and mild erythema of the vaginal wall without any remaining foreign body.

Gas chromatography and mass spectrometry of the urine at this time confirmed the presence of methamphetamine and the amphetamine metabolite. Quantitative serum concentrations of methamphetamine and amphetamine were 3100 ng/mL and 110 ng/mL, respectively.

Over the initial 24 hours of hospitalization, the patient demonstrated progressive improvement in her mental status. She was extubated on day two, and then developed a productive cough associated with fever. Aspiration pneumonia was confirmed on chest radiograph and she was placed on oral antibiotics. Mild rhabdomyolysis developed without renal impairment, with creatinine phosphokinase peaking at 3,840 IU/L on hospital day two. By the fourth day of hospitalization the patient was clinically well with the exception of a persistent sinus tachycardia at rest in the 120's. Although our desire was to continue cardiac monitoring, the patient signed out against medical advice.

DISCUSSION

Methamphetamine exerts its effects by increasing the release of dopamine from vesicular stores and increasing extracellular dopamine by reverse transport. Methamphetamine also interacts with 5-HT transporters, N-methyl-D-aspartate and monoamine transporters subsequently affecting serotonergic, glutamatergic and noradrenergic neurotransmission (8).

Methamphetamine toxicity predominantly affects the cardiovascular and nervous systems. Our patient presented with seizures, hypertension, altered mental status and tachycardia consistent with methamphetamine toxicity. Additionally, dysrhythmias, myocardial ischemia, hyperthermia, agitation, and intracerebral

hemorrhage may be seen in overdose. Although comprehensive urine toxicology testing was negative for other agents, all possible co-ingestants cannot definitively be excluded.

People who ingest packets of drugs or insert them into body cavities in an attempt to smuggle them are termed body packers. A typical body packer encloses a quantity of drugs in plastic bags, balloons or condoms and subsequently retrieves them after smuggling them through U.S. customs. People who ingest or attempt to conceal drugs when encountered by law enforcement are called body stuffers. Body stuffers may be more likely to exhibit early symptoms of toxicity due to poor packaging of the drug. Leakage from packets in both body stuffers and body packers has resulted in severe toxicity and death. In a recent review of body packers in New York City, the majority of deaths were secondary to heroin toxicity, there were no reports of methamphetamine body packing (9). To our knowledge, there have been no reports of methamphetamine toxicity secondary to intravaginal body packing or intravaginal body stuffing.

Our case demonstrated mucosal absorption of methamphetamine secondary to body stuffing. Since body stuffing usually occurs via the gastrointestinal tract, the vagina may be easily overlooked as a potential route of ongoing absorption. If our patient had not reported the presence of intravaginal drug packets, the remaining methamphetamine may not have been discovered and removed. This case highlights the potential for severe methamphetamine poisoning secondary to intravaginal stuffing. If either body packing or stuffing is suspected, a vaginal examination may be warranted.

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