

ARTICLE

“Parachuting” Meth: A Novel Delivery Method for Methamphetamine and Delayed-Onset Toxicity From “Body Stuffing”

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Background. Methamphetamine is an illicit stimulant that is typically smoked, insufflated, or injected. We report an unusual method of ingesting methamphetamine called “parachuting” and its implications for the treatment of “body stuffers.” **Case Report.** A 25-year-old man wrapped methamphetamine into a plastic baggie and ingested it in an attempt to “parachute.” He presented to an Emergency Department 10 hours after his ingestion because he realized that he forgot to puncture the baggie. He had no complaints and had a transient tachycardia. He was treated with activated charcoal and whole bowel irrigation, observed for 24 hours, and discharged. He returned 42 hours after his ingestion with tachycardia (220 bpm), agitation, hypertension (179/74 mmHg), and rhabdomyolysis (CPK 7771 U/L), requiring mechanical ventilation and a midazolam drip (10 mg/hr). **Conclusion.** “Parachuting” is a novel method of ingesting methamphetamine. We report a case of a single-packet “body stuffer” with severe symptom onset that was delayed over 36 hours. Treatment protocols for “body stuffers” using this technique may require more prolonged observation and/or imaging studies to determine the absence of gastrointestinal packets.

Keywords Parachuting; Body stuffing; Body packing; Methamphetamine; Delayed toxicity; Sustained release; (3,4-methoxy-methylenedioxy-methamphetamine); Ecstasy; Hyperthermia; Whole bowel irrigation

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INTRODUCTION

A technique known as “parachuting” involves wrapping ecstasy (3,4-methylenedioxy-methamphetamine, MDMA) or methamphetamine in a wrapper and letting the ingested wrapper unravel like a parachute in the gastrointestinal tract slowly, releasing the enveloped drug. We report a case of a misguided attempt to “parachute” methamphetamine to prolong its duration of action, which instead led to a significant delayed onset of toxicity. After being observed for 24 hours as an asymptomatic “body stuffer” exposure, a 25-year-old male presented with hyperthermia, agitation, and rhabdomyolysis as a result of his poorly contrived attempt to parachute methamphetamine. This technique may represent a new method of drug delivery amongst users and highlights the risk of delayed onset of clinical manifestations from “body stuffing,” perhaps requiring a more prolonged effort at observation and packet recovery.

Case Report

A 25-year-old male drove from Arizona to Oregon and attempted to use methamphetamine in a sustained release manner to keep him awake for the long drive. Instead of wrapping his methamphetamine in tissue paper and swallowing it, he wrapped it in a sealable plastic baggie. His usual modification to the parachuting technique is to roll the drug up in a sealable plastic bag and to cut the end off before swallowing it. When he did not get an effect for his drug he felt he made a vital error in sealing the baggie instead of cutting off the end or leaving it unzipped. He developed the onset of abdominal pain approximately 10 hours later, prompting his visit to an emergency department. Prior to presenting he had tried to make himself vomit by sticking his fingers in his throat, but was unsuccessful in retrieving the drug. He felt a

“bit revved up” but attributed this to his nervousness at having incorrectly performed the parachuting procedure and having to come to a hospital to try to fix the situation.

On presentation, his vital signs were HR 119 beats per minute (bpm), RR 18/min, BP 150/98 mmHg, T 37.6°C. Except for mild tachycardia, his physical exam was unremarkable. An ECG showed sinus tachycardia with normal intervals. His heart rate decreased to 100 bpm shortly after arrival without pharmacologic intervention. An acute abdominal series (antero-posterior chest and supine and upright abdominal radiographs) showed neither evidence of a detectable foreign body nor any evidence of intestinal obstruction. A rapid urine drug screen by ELISA was negative for methamphetamine (qualitative assay for d-methamphetamine), but positive for cannabinoids. The patient was given 50 g of activated charcoal and whole bowel irrigation was performed with polyethylene glycol solution (1 liter of PEG solution per hour via NGT for approximately 8 hours). Despite passing clear, liquid rectal effluent, no drug packets were retrieved and the patient remained asymptomatic after an overnight observation on continuous cardiac monitoring. After 12 hours of observation in the hospital (approximately 24 hours post ingestion) he was discharged.

The patient returned 18 hours later (42 hours post ingestion) with agitation, tremor and profuse sweating, which had been progressively worsening over several hours. By the time he arrived in the emergency department he had acute delirium and was observed to be shaking. His sister stated that he may have taken a larger amount of drugs than he had first described in order to hide them from the police. She also confirmed that he had not ingested any additional methamphetamines or medications during his time away from the hospital. His vital signs were HR 210 bpm, RR 30/min, BP 179/74 mmHg, and T 38.3°C. His pupils were dilated to 6 mm but reacted to light. His cardiac exam was tachycardic without murmur, his lungs were clear without rales, and abdominal exam was non-tender. Neurologically he was agitated but alert, had a resting tremor and ankle clonus. His WBC was 11,200, Hematocrit 51.3, Na 142 mmol/L, K 4.8 mmol/L, CO₂ 19 meq/L, Cl 106 meq/L, BUN 12 mg/dL, Creatinine 1.1 mg/dL, Creatine Kinase (CK) 155 IU/L, CK-MB 3.2, and troponin 0.0 ng/mL.

The patient was treated with intravenous (IV) normal saline and IV lorazepam (4 mg), IV midazolam (5 mg), and IV etomidate (12 mg) for sedation and control of increasing agitation, which were ineffective. The patient was then urgently intubated to protect his airway, using etomidate 20 mg IV, fentanyl 100 mcg IV, and 50 mg rocuronium IV. He was placed on an IV midazolam continuous infusion at 5 mg/hr for sedation. After receiving activated charcoal (50 g PO), whole bowel irrigation by nasogastric tube was commenced with polyethylene glycol (PEG) solution (1 liter PEG solution per hour). The midazolam infusion needed to be titrated up to 8 mg/hr after 30 minutes, and then 10 mg/hr before adequate control of motor agitation was achieved. He also received doses of haloperidol and morphine. He developed mild rhabdomyolysis with his CK peaking at 7771 IU/L (MB fraction 206) 12 hours after presentation.

His troponin increased to 2.0 ng/mL at 6 hours post-presentation, but decreased to 0.9 ng/mL at 12 hours post-presentation.

Despite whole bowel irrigation at 1 liter per hour for approximately 24 hours, no plastic bag was recovered from his stool. His heart rate did not decrease to less than 100 bpm until 20 hours after the second hospital presentation, and he had two brief periods of sustained narrow complex tachycardia. His temperature peaked at 39.2°C, and cooling blankets were applied during his stay in the ICU. He gradually had a return of normal vital signs, except for a low-grade fever which was attributed to aspiration pneumonia. He was weaned off the midazolam and extubated on his third hospital day. His renal function tests remained normal and an adequate, clear urine output was achieved with intravenous hydration. He was discharged with prescriptions for lorazepam and amoxicillin/clavulanate.

DISCUSSION

We report a case of ingested methamphetamine that is unique in several ways. The patient used a novel method of methamphetamine ingestion (“parachuting”) that led to the delayed onset of symptoms that were more severe than is typical after “body stuffing.”

Parachuting

“Parachuting” is a technique used to ingest methamphetamine where several times the typical oral methamphetamine dose is placed in a plastic bag. The end of the plastic bag is removed and the bag is then tightly rolled and ingested. The plastic bag will then, theoretically, unfurl slowly in the gastrointestinal tract. Alternatively, crushed tablets may be placed into a paper wrapper that slowly dissolves (1). Methamphetamine may be ingested in this way to simulate sustained release packaging, and prolong the absorption of methamphetamine and the associated euphoric or sympathomimetic effects.

The patient described here intended to “parachute” in order to stay alert during a long drive. This technique would, theoretically, release methamphetamine initially, and continue to release methamphetamine over several hours. In this case, the patient’s error in technique occurred when he failed to remove the end of the plastic baggie prior to ingesting the methamphetamine. The pharmacokinetics of “parachuting” has not been described and it is unclear whether the proper use of this technique would have led to delayed release, sustained release, or a bolus release of the drug.

As is common in drug nomenclature and lingo, the term “parachuting” has several meanings that relate to several different techniques and different drugs. These alternative uses do not relate to the discussed case, but are included for clarity. “Parachuting” may be used to describe the use of benzodiazepines (e.g., diazepam or alprazolam) with MDMA (3,4-methylenedioxymethamphetamine) in order to “soften” (or parachute) the transition to the “down,” or depressive symptoms, that typically

follow MDMA use (2). The term “parachuting” has also been used to describe smoking the combination of phencyclidine with crack cocaine and the combination of heroin and crack (3).

Delayed Symptoms from “Body Stuffing”

“Body stuffers” are patients who hastily ingest poorly-packaged drugs, including cocaine, crack, methamphetamine, and heroin in an effort to avoid prosecution for possession of illicit substances (4). Drugs are typically wrapped in paper (e.g., heroin), in plastic vials (e.g., crack), aluminum foil (e.g., methamphetamine), or in sealable plastic baggies (e.g., cocaine, methamphetamines, and heroin). This syndrome should be distinguished from “body packers,” where patients intentionally ingest a large number (30–100) of well-wrapped packets with the intention of smuggling the drugs (typically across international borders). A delayed onset of symptoms has been noted in “body packers” and has been theorized in “body stuffers” from the release of the drug from its packaging. However, several reviews of “body stuffers” have, in fact, revealed that the majority of patients who develop symptoms do so within the first 3–4 hours (5,6), and that patients who arrive to the Emergency Department asymptomatic tend to remain asymptomatic during 24 hours of observation (7).

The treatment of “body stuffers,” including the amount of time to observe the patient in the hospital, varies significantly. Suggestions for observation times in the literature have ranged from 6 to 24 hours (5,7). In practice, treatment has ranged from a short observation period without intervention to simple gastrointestinal decontamination and radiological evaluation to gastric emptying, oral activated charcoal, whole bowel irrigation, radiological evaluation, and observation in an intensive care setting for 24 hours (5–7).

We are unaware of any previously reported cases of the onset of severe symptoms from a “body stuffer” after therapy with gastrointestinal decontamination (i.e., charcoal and whole bowel irrigation) and 24 hours of observation. This case is important in that it suggests that the end point for observation of “body stuffers” may need to be reconsidered. Potential endpoints may include attempted identification of all packets, radiographic evaluation, and prolonged observation for clinical symptoms. Unfortunately, all of these methods have limitations.

One potential endpoint is to continue whole bowel irrigation until all packets are identified. However, several issues make this end-point difficult to attain. First, the patient’s estimation of the number of their ingested drug packets does not correlate with either their clinical symptoms (7) or the number of packets that are retrieved (6), and does not likely correlate with the actual number of ingested packets. Second, identifying small packets in the stool may be difficult (6), particularly if the packaging is dissolvable or is designed to empty during gastrointestinal transit. Third, absolute observation of patients (e.g., even while in the bathroom) is not always possible in a hospital setting. Finally, in a significant number of patients no packets are

identified while the patient is in the hospital (6). In these cases, it is unclear whether these patients pass the packets prior to arriving to the hospital, pass them when unsupervised, pass the packets after discharge, or if they did not ingest any packets at all.

Another potential endpoint of therapy and observation may be to identify, by radiography, whether or not packets remain in the gastrointestinal tract. Unfortunately, the small packets of “body stuffers” or “parachuters” are likely to be difficult to detect with any reliability (8). Abdominal radiographs (KUB) identify “body stuffer” packets 0–9% of patients (5–7). Contrast-enhanced radiography (9) and ultrasound (10) are insensitive in detecting even the large packets of “body packers” and are unlikely to be sensitive in detecting smaller packets or empty baggies. Abdominal CT without contrast has been used and has identified packets in “body stuffers” (7,11,12), however false-negative cases have been reported (8) and its sensitivity in these cases is unclear.

Given the limitations described above, it is difficult to determine an appropriate treatment plan for “body stuffers.” However, it does seem reasonable to treat these patients with activated charcoal and whole bowel irrigation for an extended period, possibly up to 36–48 hours. Consideration should be given to continuing observation if all packets have not been retrieved, or packets are visible on abdominal CT. Further study in this population will be required prior to the crafting of any absolute recommendations for observation. Whether “parachuting” should be treated differently than “body stuffing” remains to be determined.

Severity of Symptoms

The patient described here developed severe symptoms of methamphetamine toxicity that is not typical with regular methamphetamine usage or with the ingestion of a small number of dose-packs (e.g., “body stuffing”). The “parachuting” technique differs from “body stuffers” in that users typically fill a single packet with several times their normal oral dose of methamphetamine, as opposed to several small dose packets. Rupture of a single, large packet of methamphetamine results in the rapid absorption of a large dose of methamphetamine, whereas similar symptoms from body stuffing may require the rupture or leakage of multiple baggies. This is the likely explanation of the severity of his symptoms in this case, however, it is possible that the patient intentionally ingested a larger-than-normal dose when he left the hospital and was unsupervised by hospital personnel. This would be unusual, however, because the patient is a seasoned methamphetamine user and it would be unlikely that he would make a dosing error that would cause the severity of toxicity seen in this case. Additionally, the patient was screened for, and had no signs of, self-harm behavior or suicidality. We confirmed, with both the patient after his treatment and his family during the hospital stay, that he did not use any additional methamphetamine or any other drugs. Although it remains a possibility, we feel that this is unlikely based on his history and that of his family who supervised him.

CONCLUSION

We report a case of severe methamphetamine toxicity after a novel method of ingestion called “parachuting” that demonstrates the potential for delayed toxicity after the ingestion of sealed drug packets (“body stuffers”).

REFERENCES

1. Logan BK, Couper FJ. 3,4-Methylenedioxymethamphetamine – Effects on human performance and behavior. *Forensic Sci Rev* 2003; 15:11.
2. Drug Enforcement Administration, National Drug Intelligence Center, New Jersey Drug Threat Assessment Update. Accessed 15 February 2005, <www.usdoj.gov/ndic/pubs1/1703/odd.htm> (August 2002).
3. Office of National Drug Control Policy, Street Terms: Drugs and the Drug Trade. Accessed 15 February 2005, <www.whitehousedrugpolicy.gov/streetterms>.
4. Roberts JR, Price D, Goldfrank L, Hartnett L. The bodystuffer syndrome: a clandestine form of drug overdose. *Am J Emerg Med* 1986; 4:24–27.
5. Sporer KA, Firestone J. Clinical course of crack cocaine body stuffers. *Ann Emerg Med* 1997; 29:596–601.
6. Hoffman R, Chiang W, Weisman R, Goldfrank LR. Prospective evaluation of “crack-vial” ingestions. *Vet Hum Toxicol* 1990; 32:164–167.
7. June R, Aks SE, Keys N, Wahl M. Medical outcome of cocaine bodystuffers. *J Emerg Med* 2000; 18:221–224.
8. Eng JGH, Aks SE, Waldron R, Marcus C, Issleib S. False-negative abdominal CT scan in a cocaine body stuffer. *Am J Emerg Med* 1999; 17:702–704.
9. Marc B, Baud FJ, Aelion MJ. The cocaine body-packer syndrome: evaluation of a method of contrast study of the bowel. *J Forensic Sci* 1990; 35:345–355.
10. Hierholzer J, Cordes M, Tantom H. Drug smuggling by ingested cocaine-filled packages: conventional x-ray and ultrasound. *Abdom Imaging* 1995; 20:330–338.
11. Cranston PE, Pollack CV, Harrison RB. CT of crack cocaine ingestion. *J Comput Assist Tomogr* 1992; 16:560–563.
12. Pollack CV, Biggers DW, Carlton FB, Achord JL, Cranston PE, Eggen JT, Griswold JA. Two crack cocaine body stuffers. *Ann Emerg Med* 1992; 21:1370–1380.