

by Julie Holland

The trend of smoking marijuana soaked in embalming fluid is gaining popularity throughout the United States. The syndrome of intoxication looks nearly identical to that seen following phencyclidine (PCP) use, with agitation, disorganized speech and thoughts, and diminished attention. The authors believe that this new trend in drug use involving marijuana also presents a resurgence in PCP use.

The following is a case report:

The patient is a 28 year old African American male who arrived via ambulance to Bellevue psychiatric emergency room in the evening. On admission, patient was naked, disoriented to self, place, and date, and was grossly psychotic. He referred to himself as "Allah," "Justice" and "Jesus." Vital signs were: temperature 99.8 degrees Farenheit, pulse was 72 and regular, blood pressure was 140/90 mm Hg, and respiratory rate was 18. When asked if he had any drug allergies, patient replied, "yeah...wet." The patient appeared alternately confused, then agitated, speaking of the coming of the messiah. He appeared to be actively hallucinating, frequently looking over his shoulder or to his right as if he had heard something.

After receiving 2 mg IM ativan, patient was able to state his name, and that he had come on a bus from Philadelphia to Manhattan in order to make a rap album. Patient was grandiose about his connections to rap starts in New York City. He explained that he had disrobed on the bus from Philadelphia in order to show the passengers that he was a "Native American, and not a mixed up American." Patient was preoccupied with aliens, surveillance cameras, and robots. He repeated ideas about twins and clones, referring to the "invasion of the double-mint twins.... the devil-made twins." Although patient did not seem expansive or labile, he felt he was "bubbling with emotion." He related paranoid ideation, that the Masons had a plot against him and that the aliens had replaced his eye with a camera in order for him to transmit his vision to their spaceship. He stated that the voices were telling him to do things such as "duck," and "look for the red spots." The patient was inclined to follow the commands of these voices during the interview. He was also distractable, and inappropriately sexual with the examiner.

Of note, patient states he has been smoking "wet," which he believes to be tea leaves soaked in embalming fluid, two to three days prior to admission. Patient repeatedly denied smoking "wet" on the day of the ER presentation. He endorsed decreased sleep, racing thoughts, and auditory hallucinations for the two weeks prior to admission. He admitted that he had been smoking "wet" on and off for those two weeks, perhaps three or four times in the preceding fourteen days.

The patient denied any prior psychiatric history, except for one previous episode of psychosis after smoking "wet" which led to a prison sentence for punching a hole through a window. At that time, the

patient also experienced paranoia and auditory hallucinations. "I lost my mind... the voices gave me directions." Patient admits that every time he smokes "wet" he has the same pattern of response. He denied abusing any other drugs. Patient has no significant past medical history or allergies, and is not taking any standing medications.

Family psychiatric history is significant for a mother with an unknown psychotic illness, and crack cocaine abuse. Patient's father was a mortician. Patient reported to me that he can readily identify the smell of embalming fluid and that the "wet" he normally purchased had this distinct smell, although he noticed that sometimes it did not.

The patient was re-evaluated on the morning after his presentation to the emergency room. At that time, all psychiatric symptoms were gone. Patient was no longer delusional, was fully oriented, and was able to give all personal and historical data. He had a complete memory of all delusional thoughts and hallucinatory phenomenon from the day before, and could describe his behavior accurately. Patient stated that every time he uses "wet" he has similar symptoms. "I become hilarious, I can rhyme better. It makes me emotional and I feel uncontrollably funny." He described "wet" as being readily available in Philadelphia, where a small glasine envelope of tea leaves soaked in what was purported to be embalming fluid was sold for five dollars. He explains that he then mixes the leaves with marijuana into one or two joints, and these are typically split between two or three people. The patient was unaware that the tea leaves may contain PCP.

The patient was discharged from the emergency room that morning, with recommended drug treatment follow up. He provided written consent for this case report, as well as a urine sample for analysis.

In 1985, Ivan Spector published a case series of five patients who presented after smoking "amp...marijuana that has been soaked in formaldehyde and dried." (1) All patients showed an inability to attend to environmental stimuli, difficulty answering questions and producing speech. They were described as agitated, but not aggressive. Four of the cases showed some psychomotor retardation and two reported feeling "mentally retarded." All patients related sympathomimetic effects while acutely intoxicated including tachycardia, tremulousness, sweating and hypersalivation. Dr. Spector compared the effects of "amp" and PCP, showing the physical signs of intoxication to be indistinguishable. Unfortunately, no mention is made of whether the patients' urine was tested for the presence of PCP, or whether the author thought that amp was PCP.

In 1988, an abstract appeared in Neurology presenting a single case of "amp" ingestion, citing two cigarettes dipped in formaldehyde. The patient's presentation included both vertical and horizontal gaze evoked nystagmus, agitation and confusion, as well as bilateral upper extremity weakness and depressed reflexes. Of note, this patient experienced both pulmonary and cerebral edema, requiring mechanical ventilation due to coma. The patient required dialysis for rhabdomyolosis on day three, and on day five experienced five tonic clonic seizures, with an EEG showing diffuse slowing. The patient is described as "near normal" by day 17. No mention is made of PCP, but the nystagmus is highly suggestive of PCP intoxication. (2)

Spector suggested possible mechanisms for the disturbances seen in behavior following intoxication including acute anoxic encephalopathy due to formaldehyde affecting lung parenchyma, formaldehyde intoxication proper, or formaldehyde alteration of the THC molecule. However, an unpublished analysis of five samples of "illie" in New Haven, Connecticut, yielded no marijuana at all. Samples consisted of mint leaves, or in one case cut up duct tape, soaked in embalming fluid and PCP. All five samples contained PCP; none contained marijuana. Interestingly, six patients in the emergency room who admitted to recent "illie" use all had urine toxicology screens negative for PCP. (Phil Brewer, personal communication)

Phil Brewer, attending physician at Yale University Hospital emergency room, began to notice the phenomenon three or four years ago, and created an "illie task force" in New Haven. Setting up a series of seven rallies in the community to alert people to the dangers of "illie," he now believes the practice has become widespread and chronic. He estimates five cases per weekend, and finds that roughly eight to ten of fifty interviewed substance abusers endorse using "illie." Ned Jaroszewski, director of the psychiatric emergency room at Hartford Hospital estimates a peak case load of fifteen cases in two months during 1994 and 1995. He puts the more recent numbers at five cases within the year. Patients appeared to be in a "toxic delirium," with psychotic features. He compares the intoxicated state to that seen with PCP, but describes the patients as less violent. Patients were treated with antipsychotics to obtain sedation, and tended to clear upon waking, usually within twenty-four hours. The longest an unmedicated patient took to clear was two and one-half days. He estimates that of fifteen cases, perhaps two had urine toxicology screens which were positive for PCP. (personal communication)

Charles McKay, attending toxicologist at Hartford Hospital described ten cases of patients who admitted to smoking marijuana soaked in embalming fluid and were agitated but non-violent, with none reporting auditory hallucinations. He estimates that roughly ten percent of these cases were PCP positive. He reports an increase in the number of PCP positive toxicology screens obtained by the state forensic laboratory of Connecticut (ten PCP positive samples a month out of 3,000 samples a month) but only counts five PCP positive cases for the whole year of 1996 in the clinical laboratory at Hartford. (personal communication)

Claudia Bemis, director of the psychiatric emergency room at Yale is also familiar with the phenomenon. She describes the presentation of these patients as variable; most are psychotic, with a waxing and waning level of not only attention and concentration, but also agitation. Patients will be calm and nearly catatonic at one moment, and then spontaneously violent the next. Some patients report auditory hallucinations, and most appear delirious. Their average length of stay in the hospital is 12 to 19 hours and an estimated forty percent of the cases require a psychiatric admission. Some cases are PCP positive, others are not. (personal communication) Most clinicians agreed that the syndrome responds to droperidol or haloperidol, and some specifically recommend avoiding benzodiazepines due to disinhibition.

Exact guantification of the popularity of smoking marijuana with embalming fluid, with or without PCP, is impossible. Some poison control centers do not log in calls about this phenomenon; others are not sure how to categorize the practice. Because the American Association of Poison Control Centers has no specific category, some agencies (like state and federal divisions on substance abuse) group the cases along with the PCP data. Washington D.C. has so many cases of PCP intoxication that few calls are ever made to the poison center. Other areas are seeing so many cases of marijuana reportedly mixed with embalming fluid, that they have begun to keep separate records. In Kansas City, Misouri, a separate data base has been in existence since 1989 for the drug known as "water," and the practice of smoking the mixture, occassionally known as "getting wet." According to William Watson, toxicologist at Truman Medical Center, patients who purchase "wet" know that they are buying marijuana, embalming fluid, and PCP. Five hundred fourteen PCP using patients have been entered into the data base. Watson noticed an increase in "wet" usage after April 1993 and so has separated the data around that date. Between 1989 and April of 1993, PCP cases numbered between one and twelve per three month period. After April of 1993, the range grew to between 26 and 48 cases per three month period. The percent of PCP patients that specifically mentioned "water" increased from 24% to 47%. He counts 103 patients who have reported using "water" prior to their emergency room since January of 1990.

In Galveston, Texas, the poison control center has counted thirty three cases since 1993. The Connecticut poison control center has been collecting data since 1993 as well, and has only eight reports of exposures. The Yale University Hospital has begun to do a PCP assay on all urines submitted for toxicology screening. Since September 1996, there have been 43 PCP positive urines out of 2366

specimens for a 1.8% positivity rate.

The Drug Abuse Warning Network estimates 6,510 emergency room visits in 1995 secondary to PCP use (or PCP in combination with another chemical) up from 3,470 in 1991. (3) The AAPCC annual report also shows an upwards trend of PCP exposures, from a low in 1990 of 267 to a high in 1995 of 426. (4)

We obtained a sample of liquid purported to be embalming fluid from a field ethnographer in Texas(Bill Elwood), where people dip cigarettes of tobacco or marijuana into small vials of fluid. The joints are called "squares" and the wet marijuana is called "fry;" adolescents are congregating in "fry houses." (5) A sample obtained from Houston, Texas was submitted for analysis. Gas chromatography/mass spectroscopy was performed by the Bureau of Laboratories of the New York City Department of Health. Spectral analysis of the prominent chromatographic peaks included phencyclidine (PCP), as well as several congeners of phencyclidine, including 1-piperidinocyclohexane carbonitrile (PCC) and phenylcyclohexane (PCH). Solvents include diethylether and benzene. Starting materials for phencyclidine synthesis, such as bromobenzene and cyclohexanone, were also identified. Although GC/MS cannot identify formaldehyde or glutaraldehyde, appropriate testing is in progress.

We are interested in analyzing more samples of "embalming fluid" to determine how often this fluid is actually PCP.

PCP and embalming fluid seem to be historically and semantically intertwined. The term "embalming fluid" was used to refer to PCP in the seventies, considered by some to be a marketing ploy. Embalming fluid has reportedly been used to cover the smell of PCP to evade detection through customs. One internet posting by a police officer described PCP 'cut with formaldehyde.' Most mentions of "illie" or "dank" on the internet include the possibility that the fluid will contain PCP. The US Department of Health and Human Services Marijuana Reality Check Kit, an online source of information about marijuana, warns of marijuana "spiked will other illicit drugs like cocaine, crack, PCP, even embalming fluid." (6)

Several of the names used to refer to embalming fluid-soaked marijuana share the same terminology for PCP. The following is a partial list of regional names used for this practice. Underlined words are those which also refer to PCP.

Chicago, IL happy sticks Cleveland, OH sherm, wet, sheba, takow Hartford and New Haven, CT illie Kansas City, MO dank, wet, therm New Orleans, LA clickums, clickers New York, NY hydro, wet Philadelphia, PA wet Houston and Galveston,TX fry, whack Washington, DC loveboat, boat Los Angeles, CA sherm

The funeral industry is aware of this practice to some extent. A regional newsletter for the Washington State Funeral Directors Association dated December 1994 warned funeral homes that Seattle youths were smoking marijuana soaked in embalming fluid and recommended enhanced security measures in storing the fluid. (7) Another newsletter describes teens abusing formaldehyde "for a body numbing buzz and a fiery feeling in their lungs," and puts the practice at thirty to forty years old. (8) A funeral home in Sanger Texas was broken into on September 3, 1996. Upon finding no fluid, four teens cut off a corpse's finger. The local police sargeant was quoted as saying "dipping cigarettes into the fluid is a

dangerous technique of getting a cheap high." (9) A spokesman from Service Corporation International, one of the country's larges funeral companies, denies there have been any funeral home break-in's, or any missing formaldehyde. (Bill Barnett, personal communication)

Besides funeral parlors, formaldehyde is available from drug manufacturers and chemical warehouses, and is legal. Advice for how to procure the fluid is readily available on the internet, as are recipes for home made versions. (10) A number of newsgroup postings give advice on how to soak the marijuana and dry it under fans, and what to expect from the intoxication.

Workers at an adolescent drug treatment center in Olathe, Misouri estimated that twenty five percent of their patients had used "dank."Barbara Banks, assistant director of the treatment center cited its availability and low price as attractions to the drug, and reported that "dank houses" were beginning to appear in the region.(11)

An intake interviewer and counselor for a drug treatment center in Angleton, Texas, reports seeing three patients whom he feels are permanently affected from the practice. He describes short term memory dysfunction, lethargy and amotivation, and decreased spontaneous speech. He likens the syndrome to one he has seen due to long term inhalant abuse. (Ron Roy, personal communication) All three of these adolescents (ages 15 to 24) assumed they were purchasing marijuana soaked in embalming fluid. None of them thought they were using PCP.

A letter to the editor by Hawkins in 1994 reported three cases of smoking embalming fluid-soaked marijuana "sometimes also laced with PCP," which preceded persistent dysmnesia. Two of these patients underwent neuropsychiatric testing, which demonstrated temporal disorientation and memory impairment. (12)

A young man in Connecticut cut his wrists and drank floor stripper, while intoxicated with "illie." Driven by his psychosis, he reported an urge to kill himself before "they get me." Police felt the patient was acutely paranoid at the scene; psychiatrists documented a psychomotor agitated and delirious presentation, replete with auditory, visual, and tactile hallucinations at the time of initial evaluation on a Monday. That Thursday, the patient exhibited bizarre posturing but did not have the waxy flexibility occassionally seen in catatonia. On Friday he was noted to be euphoric, expansive and grandiose, giggling frequently, showing poor judgement (offering staff members money) and was overly friendly. The patient was discharged on Sunday, still grandiose and expansive, on standing haloperidol and lorazepam. The patient admitted reported smoking "illie" purchased in New Haven prior to his admission. His urine toxicology screen was positive for PCP, and negative for THC. Dr. Ned Jaroszewski, attending consultation/liason psychiatrist at Hartford Hospital has seen multiple cases of "illie" intoxication, but this was the first case of subsequent catatonia and mania, and believes there may be an underlying bipolar disorder in this patient. (personal communication)

A 23 year old "hydro" smoker in New York City describes the high he achieves as feeling incapacitated, and and refers to it as being "stuck." He was afraid he was going to hurt himself and others were going to hurt him. He heard a distant male voice call his name. He knew where he was, but not the time of day or date. He describes memory disturbances, specifically forgetting what he was saying while speaking. Of note, the patient reports he "lost time." The patient, a homosexual male, admits to me that he had unprotected anal sex during the time he was high and has no memory of it; he was informed later by some friends. He feels he was "out of control... horny... and elated." In a subsequent interview, the patient tells me he has heard on the street that "there is elephant tranquilizer in hydro." When asked whether this meant PCP, he is unsure.

About this Document it is unclear whether the practice of smoking marijuana soaked in embalming fluid connotes a new type of intoxication, or whether what we are seeing is PCP intoxication that simply has a new

name or gimmick to aid in its allure and sales. More analyses of liquid samples purported to be "embalming fluid" might help to answer this question. Secondly, it is possible that there are long term sequelae from this practice; more case reports need to be gathered. The other issue to be considered is one of public health concern. Clearly, intoxication with this drug severely clouds ones judgement. The last case vignette underscores the importance of the influence of dissociative anesthetics on "safe sex" practices.

Footnotes

1 Spector, I. AMP: A new form of marijuana. Journal of Clinical Psychiatry 1985; 46: 498-499 .

2 Schulz P, Jones JL, Patten BM. Encephalopathy and rhabdomyolysis from ingesting formaldehyde dipped cigarettes. [abstract] Neurology 1998; 38: (Suppl 1)207.

3 Substance Abuse and Mental Health Services Administration Office of Applied Studies (SAMHSA). Prelminary Estimates From the Drug Abuse Warning Network: Preliminary Estimates of Drug-Related Emergency Department Episodes. Advance Report Number 17, August 1996 page 29

4 Litovitz TL, Bailey KM, Schmitz BF, Holm KC, Klein-Schwartz W. 1990 annual report of the American Association of Poison Control Centers National Data Collection System. Am J Emerg Med 1991 Sep;9(5):461-509

Litovitz TL;,Felberg L, White S; Klein-Schwartz W. 1995 annual report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. Am J Emerg Med 1996 Sep;14(5):487-537

5 Elwood, William N. "Fry": A study of adolescents' use of embalming fluid with marijuana and tobacco. Austin: Texas Commission on Alcohol and Drug Abuse 1998 page 5

6health.org/reality

7 "Embalming fluid used to induce high" Washington State Funeral Directors Association News December 1994 page 5

8 " Dank - Formaldehyde Abuse" Medical Review Officer Update May, 1996 page 1

9 "Teens get the finger" Fairfax Journal, Fairfax Virginia October 16, 1996

10 http://www.slais.ubc.ca/users/lassa/odue/embalm.html

11 Associated Press, March 2, 1996

12 Hawkins KA, Schwartz-Thompson J, Kahane AI. Abuse of formaldehyde-laced marijuana may cause dysmnesia. Journal of Neuropsychiatry and Clinical Neurosciences 1994; 6(1): 67

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