Pepper Spray and In-Custody Deaths

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Contents:

Introduction

Responding to the need for a less-than-lethal alternative, police departments throughout the country have adopted Oleoresin Capsicum (OC) or pepper spray as a force option. OC is a naturally occurring inflammatory agent found in cayenne peppers. OC causes almost immediate swelling and burning of the eyes and breathing passages. When the agent is-inhaled, the respiratory tract is inflamed, and breathing is restricted. Effects do not support high levels of physical activity such as fighting with the police.

Anecdotal reports of agent effectiveness are favorable: significant reductions in officer/arrestee injuries and in use-of-force complaints have been reported. Moreover, studies indicate that the risk of injury or death is statistically improbable (for discussion of this, see Onnen, 1993). However, cases have recently been reported where deaths have occurred subsequent to OC use. These deaths have created some concern among those in the law enforcement community, as well as among others, with regard to OC's possible role. As a result, some agencies contemplating product adoption are reluctant to begin use, while agencies using the product are seeking information affirming product safety and effectiveness.

To address this concern, the National Institute of Justice (NIJ) asked the International Association of Chiefs of Police (IACP) to collect data on in-custody death incidents where

pepper spray had been used in the arrest procedure and to assess from this aggregated data whether there is a possibility that OC could be a factor in these deaths. This report will cover information resulting from the examination of these specific incidents.

Reported Incidents

An incident involving a sudden death while in police custody is not a distinct category of information reported by local, state or federal law enforcement agencies. Therefore, in order to collect some representative data on the incidents where death followed the use of OC spray, four sources of information were used: news media services, California POST, the American Civil Liberties Union of Southern California and networking among IACP members.

A total of 30 incidents were found between August of 1990 and December of 1993 in which the death of a subject occurred following a spraying with OC. The earliest incident in this study occurred on August 27, 1990; except for one incident in 1991 and two in 1992, the remaining 26 took place in 1993. Although there is no way of knowing all the incidents that have taken place, it is logical to conclude that most occurrences would be fairly recent since the substantial growth in OC use has been over the last two years. With knowledge of 30 occurrences from 13 states, information was obtained to review the cause of death and to determine commonalities among the cases. To investigate these cases, the following procedure was used:

- A review of the incident reports of the law enforcement agency involved.

- A review of the medical-legal investigative office (coroner or medical examiner) records, including investigation reports and autopsy reports, together with toxicologic information and conclusions as to the cause of death.

- A comparison of all cases where complete details existed to determine what patterns were present in the nature of the confrontations.

The 30 cases, all involving male decedents, share several commonalities. All subjects behaved in a combative and/or bizarre manner and struggled with the police. Drugs and/ or alcohol were involved in most cases. In the majority of cases, OC spray was either ineffective or less than totally effective. Generally, restraint techniques were employed subsequent to spraying, and with one exception, all deaths occurred either immediately or soon after the confrontation.

Sufficient information was obtained in 22 of the 30 cases to allow for a thorough review of the incident so a reasonable conclusion as to the cause of death could be determined. Specifically, an autopsy and the police report were necessary so an entire incident could be reviewed to ensure that all causal and/or contributory factors to the death were examined. The reviews' results indicate that OC was not the cause of death in any of the cases.

In the one case where OC was listed in the autopsy report as a factor in the death, the review did not substantiate that opinion. Our review concluded that, in these cased OC was not a factor in any of the deaths and that Something else caused the subject to die. More specifically, it was concluded that in 18 of the 22 cased positional asphyxia was the cause of death, with drugs and/or disease also being contributing factors. In the remaining four cased three involved a drug (cocaine)-related death, and one involved a drug (cocaine)/ disease-related death.

The circumstances leading to positional asphyxia in many cases were probably initiated by handcuffing subjects (behind the back) and having them on their stomachs or in a position that allowed them to end up on their stomachs. In some cased ankle restraints were concomitantly employed with hog-tying and/or pressure on the back by an officer. Subjects were also often transported in a prone position, and a number of them were markedly overweight with “big bellies.”

In such a prone, secured position, it is very difficult for any individual to breathe. In most instanced drugs (including alcohol), disease and obesity made the subject even more vulnerable to being denied proper breathing.

In conclusion, in none of the 22 cases was OC considered to be a cause of, or a contributor to, the deaths. Rather, the cause of death in the majority of cases was determined to be positional asphyxia, aggravated by drugs, disease and/ or obesity.

Custody-Related Deaths

Although OC was not implicated as a lethal factor in the reported deaths further discussion of sudden death in custody is warranted because of the potential for certain individuals to die in police custody. While subsequent evaluation of civil and criminal liability is often incumbent on the courts an extensive investigation by the individuals charged with determining the cause of death is also required (Mittleman and David 1991). To reasonably establish the cause of death, a broad range of factors must be considered:

Nature of the confrontation
Weapon(s) if any, employed by officers
Amount and duration of physical combat
System or type of restraint employed
Transportation of the subject
- Destination
- Duration
- Mode of transport (police car, EMS vehicle)
- Position of subject during transport

Emergency room observations and actions
Postmortem examination (autopsy) of subject
- Nature of injuries
- Diseases present
- Drugs present

- Other physical factors

While custody deaths are rare, they tend to share common elements which occur in a basic sequence. Subjects will often display bizarre or frenzied behavior. Almost always the subjects are intoxicated by drugs and/or alcohol. Usually, subjects will engage in a violent struggle with the police, requiring the officers to employ some type of restraint technique. During or immediately after the struggle, the subject becomes unresponsive, goes into cardiopulmonary arrest and does not respond to resuscitation.

Experts postulate that often the mechanism of sudden custody death is an abnormal heart rhythm produced by one or more of the following the arrhythmogenic potential of catecholamines released during the struggle, certain drugs (e.g. cocaine, amphetamines) and alcohol. All of these substances work directly on the heart and can produce fatal arrhythmias (DiMaio and DiMaio, 1989). In addition certain restraint techniques (i.e., hog-tying and prone positioning) combined with intoxicants and catecholamines can contribute to death (DiMaio and DiMaio, 1989; O'Halloran and Lewman, 1993).

Determination of cause of death is often problematic regardless of the causative conclusions rendered. Attesting to the perils of investigating and certifying custody death, Luke and Reay contend that "there is no more slippery slope than death in custody" (1992, 98). Such deaths often follow violent struggles with police and create the potential for significant legal and departmental ramifications. Witnesses may misinterpret such events as police brutality. Family members, the news media and concerned citizens' groups may become involved and demand further case investigation and even outside case intervention. The potential complications are exacerbated by the fact that often little pathological evidence is demonstrated at the autopsy (Luke and Reay, 1992 DiMaio and DiMaio, 1989; Reay et al., 1992). When negative findings are reported, accusations of conspiracy or incompetence may be directed at the medical examiner's/ coroner's office. Involved police officers may be similarly accused and subsequently required to further justify their actions.

Moreover, due to the lack of or difficulty in interpreting pathological evidence, the cause of death may be misattributed to police action (see Mittleman and Davis, 1991, for an excellent discussion of this possibility). Wetli (1991, 3) cautions that "sole reliance upon anatomical findings for the determination of the cause and manner of death is fraught with error" as "death certification must rely upon physical evidence and witness testimony." Hirsch and Adams (1993, 140) similarly warn that "the pathologist who focuses solely on anatomic causes of death is doomed to fail . . . equally important are the evaluations of the history, circumstances surrounding death, and the fatal environment."

Based on these considerations law enforcement personnel must be aware of and familiar with deaths in custody. The benefits of such understanding are twofold: police may potentially avert death by recognizing symptomatology and thus rendering/obtaining assistance; or if a fatality does occur, police will be familiar with the problems associated with custody death investigation and certification.

General Conditions

Research suggests that four conditions may account for the majority of custody-related deaths: positional asphyxia, cocaine intoxication, excited delirium and neuroleptic malignant syndrome. Each condition is subsequently discussed, so law enforcement personnel will have a basic familiarity with some of the various presentations of these general types of custody deaths.

Positional Asphyxia:

Positional asphyxia occurs when body position interferes with respiration, resulting in asphyxia (Reay et al., 1992). Positional asphyxial-deaths tend to occur in a similar manner: maximally restrained subjects unless seated upright in police vehicles may become quiet and inactive after several minutes of transport. Respiratory difficulty is exhibited, and subjects subsequently stop breathing.

Certain factors can render individuals more susceptible to sudden death due to positional asphyxia. Such predisposing factors include drug/alcohol intoxication (bell et al., 1992); excited delirium (O'Halloran and Lewman, 1993); and violent muscular activity. Acute alcohol intoxication is a major risk factor because respiratory drive is reduced, and subjects do not realize they are suffocating. Excited delirium combined with certain restraints (e.g., hog-tying) can also increase the susceptibility to sudden death by placing catecholamine stress on the heart. Subjects who have engaged in violent activities are rendered more vulnerable to subsequent respiratory muscle fatigue. Such fatigue may prove fatal to a restrained subject whose movement is restricted.

Experts (Reay et al., 1992; O'Halloran and Lewman, 1993) contend that maximal prone restraint techniques can have sudden lethal consequences. This potential is increased in intoxicated, delirious and/or violent individuals. Law enforcement personnel should employ alternative restraint methods (e.g. upright, seated positioning) whenever feasible. In situations where prone restraints are necessary, subjects should be closely and continuously monitored.

Cocaine Abuse and Toxicity:

Cocaine is an agent that stimulates both the central nervous and the cardiovascular systems. Pharmacologically, cocaine constricts blood vessels, elevates heart rate, raises blood pressure and increases body temperature. Such effects have produced lethal anatomic catastrophes in individuals without underlying preexisting anatomic disease(s). Mittleman and Wetli (1991) note that the medical literature clearly documents cocaine-induced vasoconstriction, vasospasm and hypertension that has culminated in spontaneous intracranial hemorrhage and infarcts of the cerebrum (i.e. strokes), kidney and intestinal tract. Cocaine may also be the cause of death in cardiovascular incidents where there is no anatomic abnormality (Mittleman and Wetli 1987). Likewise, these effects can substantially compromise an already diseased heart or vascular system, and potentially culminate in fatalities (Mittleman and Wetli 1987).

Of further concern is the fact that there is not an individual minimal lethal dose since fatalities have been associated with a wide range of concentrations including very low concentrations (Mittleman and Wetli 1987). For example, the sudden occurrence of seizures and death has been documented in recreational users who chronically use even small amounts of cocaine (Fishbein and Pease, in press). Apparently, this phenomenon is the result of a kindling effect, a reverse tolerance whereby the sensitivity of the brain to cocaine is increased, and the brain's seizure threshold is lowered. Fishbein and Pease (in press) note that such potentially lethal seizures may occur any time.

Alcohol substantially increases the risk of sudden death when combined with cocaine. Researchers (Escobedo et al., 1991) suggest that the cardiotoxic effects of alcohol potentiates the cardiotoxic effects of cocaine, thus increasing the risk of overdose death. Wetli (1993) indicates that the risk of sudden death is increased 18-fold when cocaine is used in combination with alcohol. This may be due to the production of cocaethylene, a result of this combination.

Mittleman and Wetli (1987) note that recreational cocaine use may be lethal via its pharmacologic effects. They argue that the role of cocaine in precipitating a hypertensive or cardiovascular crisis must seriously be considered when investigating sudden death in a population where cocaine abuse is prevalent. Police should be aware of the potential lethality of cocaine use.

Cocaine-Induced Excited Delirium:

Excited delirium is an acute mental disorder characterized by impaired thinking, disorientation, visual hallucinations and illusions (Wetli and Fishbain, 1985). behavior is consistent, purposeless and often violent. Significantly increased body temperature (hyperthermia) is part of the syndrome (O'Halloran and Lewman, 1993). Excited delirium may be part of the spectrum of manic-depressive psychosis, chronic schizophrenia and/or acute drug intoxication (cocaine, PCP and amphetamines).

The most serious psychiatric consequence of cocaine abuse is cocaine-induced excited delirium (cocaine psychosis), which may be associated with sudden death (Wetli and Fishbain, 1985). Although most individuals will respond to treatment, cocaine-induced excited delirium is usually regarded as a potentially lethal medical emergency. Wetli (1992) notes that hyperthermia is a negative prognostic factor frequently associated with sudden, unexpected cocaine-induced delirium deaths.

Cocaine-induced excited delirium fatalities tend to occur in a stereotypic manner, with subjects exhibiting similar behaviors. Generally, symptoms begin with an acute onset of intense paranoia, immediately followed by violent and/ or bizarre behavior. Such behaviors include displaying violence toward inanimate objects (particularly glass), running screaming and stripping off clothing (Wetli, 1992). Subjects appear psychotic, exhibit great strength and appear to have a significantly diminished sense of pain. Police must necessarily restrain such individuals, and a violent struggle generally ensues; however, force used by police often has minimal effects. Sudden death occurs either during or immediately after the struggle. Wetli

(1992) explains that the mechanism of death is uncertain, and autopsy findings are generally nonspecific, revealing only injuries sustained from the struggle with the police.

Police officers should be aware of the potential for sudden unexpected death resulting from cocaine-induced excited delirium. Police should be able to immediately recognize attendant symptoms including any one or combination of the following:

* bizarre and/or aggressive behavior
* shouting
* paranoia
* panic
* violence toward others
* unexpected physical strength
* sudden tranquillity

Subjects exhibiting any of these symptoms should be promptly transported to a nearby medical facility. Close and constant monitoring during transit is warranted.

Neuroleptic Malignant Syndrome:

Neuroleptic malignant syndrome (NMS) is another recognized cause of sudden, unexpected death. This syndrome presents characteristics in a manner very similar to excited delirium (Reay et al., 1992). Neuroleptic malignant syndrome generally occurs in psychiatric patients who are taking antipsychotic medication (i.e., neuroleptics). Physical exhaustion, dehydration and organic brain disease are additional predisposing factors. Symptoms include hyperthermia, fluctuating levels of consciousness and hypotonicity (i.e. limpness) of skeletal muscles.

NMS may also occur in individuals who are not being treated with such medication. This specific form is often diagnosed as acute exhaustive mania. The condition is poorly understood and may be related to a cardiac event due to psychological stress (Reay et al., 1992). Hirsch and Adams (in Spitz, 1993) contend that the common lay term “scared to death” is literally true: psychological stress can induce fatal cardiac arrhythmias. However, autopsy findings are generally negative, seldom revealing a pathological cause of death (Reay et al., 1992).

Anyone exhibiting symptoms of NMS or acute exhaustive mania should be taken immediately to a medical facility for evaluation. Optimally, this transport should involve two officers, thus allowing for the close and constant monitoring of the subject in custody.

Conclusion

Sudden death in custody is neither a new phenomenon nor attributable to the use of OC spray. Rather, sudden custody death can occur at any time for a variety of reasons. Any law enforcement agency may experience a sudden custody death, regardless of OC involvement. Consequently, officer awareness and recognition of risk indicators are necessary to ensure

subject safety and minimize the risk of sudden custody death. These indicators generally include:

* bizarre/violent activity
* obesity-especially “big bellies”
* drug and/or alcohol involvement
* apparent ineffectiveness of spray

Diligent observation and constant monitoring of subjects displaying any one or a combination of the indicators are procedurally warranted. Furthermore, the use of maximal, prone restraint techniques should be avoided. If prone positioning is required, subjects should be closely and continuously monitored. By implementing such procedural protocols the potential for custody deaths may be lessened.

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