



an awkward position:

ON APRIL 4, 1996, THE CINCINNATI Police Division received a call reporting that a man was jumping on top of cars in traffic and yelling that he was going to shoot someone. When responding officers reached the scene, the subject grabbed one of the officers who then began struggling with him, spraying him with mace and cuffing his wrists and ankles. Shortly after the restraint, the subject died.¹

Restraints and Sudden Death

By Deanna Abdon-Beckman

Illustration by Scott Lauman

The law enforcement community has identified the occurrence of deaths resulting from restraint, as "in custody death syndrome" or "sudden custody death." Sudden custody death will be the term used in this article. Although most sudden custody

deaths have occurred prior to EMS involvement, several cases of sudden patient death have occurred that involved paramedics and EMTs.^{2,3}

As EMS providers are often called to scenes where an agitated person is being restrained by police or the patient requires restraint by the EMS crew, it is crucial for the EMT/paramedic to be aware of the causes and risk reduction strategies associated with sudden custody deaths. This article will look at the various aspects of this phenomenon.

Positional Asphyxia

Positional asphyxia is described as asphyxia that occurs as a result of partial or complete airway obstruction due to body position.^{2,3} This is seen in small children and in individuals who are acutely intoxicated. Various cases of sudden custody death have occurred as a result of positional asphyxia during law enforcement transport. These individuals had been "hog-tied," or placed in hobble restraints.^{2,3}

A person who is in hobble restraints is generally in a prone position on his/her abdomen. In normal respiration, the diaphragm and intercostal muscles work in conjunction to exchange oxygen. The prone position prevents the diaphragm from working properly and prevents the intercostal muscles from assisting with respiration. If not monitored carefully, a patient in the prone position can become hypoxic, and death can occur.⁴

Altered States of Consciousness Or Mental Illness

Altered states of consciousness, which can be a result of medical illness, trauma, overdose or substance abuse, as well as mental illness have been cited as contributing to sudden custody death. Individuals in these altered mental states can become extremely agitated and combative. In this excited condition, the individual suffers from an increase in body temperature, pulse and respiration. Some reports indicate that the body temperature elevates to an extremely high degree, and hypothermia or heatstroke can occur.⁴ The patient becomes tachycardic, and the chance of heart rhythm disturbance increases. These altered mental states, accompanied with the physical components of agitation and combativeness, have been termed "excited" or "agitated" delirium.

Deadly Combination

As the person in an excited delirium becomes increasingly agitated and violent, emergency personnel are often dispatched to control and render care to individuals in this state. It is during and after the restraint when sudden death occurs. In a review of 11 deaths that have occurred in such a manner, R.L. O'Halloran

and L.V. Lewman discovered that all victims had been placed in "hobble" restraints (hog-tied), with the exception of one, who was placed prone and tied to a gurney.⁴

Another review cited two separate cases where sudden death occurred in a patient exhibiting the signs and symptoms of excited delirium during paramedic transport.⁵ In both cases, paramedics were called to transport a violent individual who was uncommunicative. Police were involved in both cases, and the patients were both placed in hobble restraints due to extreme violence and agitation. Paramedics transported these individuals in hobble restraints, in a prone position. During transport, both patients suffered rapid asystole arrest, ALS treatment was begun immediately, but the patients died nonetheless.⁵

It stands to reason that a person with excited delirium who is experiencing elevated vital signs and temperature, has an increased likelihood of sudden cardiac arrest if placed in the prone or hog-tied position as the person's system demands more oxygen, yet breathing is further compromised by the restraint position.

EMS Risk Factors

In the several cases that have been documented, EMS personnel were present at the time of cardiac arrest of the patients, and although aggressive ALS treatment was provided, it was to no avail.⁵ Therefore, a preventative approach is recommended.

On all calls for psychiatric patients, out-of-control individuals or overdoses, the EMS responding crew needs to be alert for the signs and symptoms of excited delirium. These include an agitated manner, yelling, incoherence, disorientation and paranoia.² These behaviors are often accompanied by violence, such as glass-breaking and destruction of property, as well as nudity. The nudity is a sign of the elevated body temperature discussed earlier.

It is often impossible to differentiate in the field someone who is in an excited delirium from someone who is extremely agitated. Therefore, the assumption should be that anyone who is extremely agitated and/or combative should be considered to be experiencing excited delirium. As the person suffering from an excited delirium is so agitated and violent it often takes several people to restrain this person. A rule of thumb should be that four to six people are needed for a safe restraint. If the EMS crew is part of the restraint process, avoid placing the subject in the prone position if at all possible. If the person is placed in the prone position to gain control, once that is accomplished, immediately place the patient in a sitting position.

Hobble restraints, or the hog-tie method, should never be used. Placing a patient in a prone or hog-tied position limits the emergency care provider's ability to monitor the airway as well as

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the vital signs. If the hog-tie method is used, the patient should be placed on his or her side during transport. Continuous monitoring of the ABC's needs to occur. Be alert as to respiratory difficulty. If the patient is spitting, it is recommended that a surgical mask or oxygen mask connected to high-flow oxygen be used. It is recommended that an ALS unit transport this individual due to the risk for cardiac disturbances. If the patient has an elevated body temperature, attempts should be made to lower the temperature by standard cooling methods.

Legal Implications

As most of these cases of sudden death of patients with excited delirium involved a restraint with numerous people, it is often assumed that the death occurred through an inappropriate restraint or an excess of physical force. Generally, after such a death, an investigation is immediately launched with that assumption. Therefore, it is in every provider's best interest to be aware of state laws governing restraint.

If your state allows EMS personnel to restrain and transport, all EMTs and paramedics must be trained in how to use take-

down maneuvers and restraints. If it does not, it should be made clear to all personnel that police officers and those trained direct the restraint; such direction should be documented, particularly if the unfortunate event of sudden death of the patient occurs.

Many suburban, rural or volunteer agencies transport violent individuals or other psychiatric patients against their will.

This is frequently done because it is believed that transporting the person to the hospital is in the best interest of the patient or because the local law enforcement agency requests that they do so. If a person is taken someplace against his will (even the hospital) by someone who does not have legal authority to detain him, it can be construed as kidnapping. Similarly, restraint of an individual without proper legal authorization to do so is assault.



Police Considerations

All agencies that provide EMS should develop a policy that addresses the issue of minimizing the risk factors associated with sudden custody death. With the encouragement of Michael Sayre, MD, the Cincinnati Fire Division has recently adopted

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such a protocol.⁶ The protocol emphasizes that the police department should be the ultimate authority in directing a restraint but states that combative patients should be transported in a supine position. The protocol discusses methods of securing an individual as to not inhibit the breathing process. Each department should develop a policy for the restraint and transportation of combative agitated patients with input from medical experts, law enforcement and legal counsel.

Summary

Sudden custody death, although not a new phenomena, seems to be appearing more frequently. This may be due in part to the increase of illicit substance abuse as well as the de-institutionalization of many of the mentally ill population. Both of these populations can experience the altered state known as excited delirium and are often put in prone positions or hobble restraints for management. EMS providers need to be aware of these risk factors in order to provide a preventative strategy for the management of these individuals. The primary preventative measure is to avoid placing this person in a prone position and banning the use of the hog-tie method or hobble restraints. The person in an excited delirium needs aggressive monitoring of the ABCs, cooling measures and should be placed on a heart monitor. All EMS personnel must become familiar with the state and local laws in their area regarding

their role in the restraint of these individuals. EMS administrators need to review types of restraints available and choose a product that will meet the needs of their crews while avoiding the potential for positional asphyxia. A comprehensive protocol should be developed with input from the legal, law enforcement and medical experts in your area, taking into account local and state laws, as well as acceptable and safe restraining methods. A preventative approach should be taken, as case histories report the chance of resuscitation to be low for people suffering from sudden custody death syndrome, even when ALS measures are instituted immediately. **J**

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