



Positional Asphyxia & Excited Delirium

Avoiding Restraint Trauma & Fatalities



By Richard Kay

Violent confrontations are dynamic and dangerous. Officers have to make complex decisions quickly, and the nature of public safety work means that officers are 'damned if they do and damned if they don't'.

This article examines restraint fatalities involving positional asphyxia and excited delirium in violent confrontations, to aid public safety personnel in safely managing these situations. Fatalities from positional asphyxia can be avoided through proper training, and while excited delirium is more complex, officers need knowledge and strategies for the professional management of both.

Positional Asphyxia

In simple terms, asphyxia is a lack of oxygen and an excess of carbon dioxide in the body's tissues, causing CO₂ toxicity. Positional (postural) asphyxia relates to a position in which the body is placed so that the ability to breathe is restricted to a degree that insufficient air is inhaled, and insufficient carbon dioxide is exhaled. That is, when someone's position prevents them from breathing adequately.

Research has suggested that restraining a person, face down, is likely to cause greater restriction of breathing. Many public safety and health personnel are now taught to avoid restraining people face down, or to do so only for a very short period of time. Risk factors which may increase the chance of death include obesity, prior cardiac or respiratory problems and the use of illicit drugs.

Most subjects who have died during restraint have engaged in extreme levels of physical resistance against the restraint for a prolonged period of time. Other issues of subject restraint can also increase the risk of death. For example, kneeling or otherwise placing weight on the subject and particularly any type of restraint hold around the subject's neck. Research measuring the effect of restraint positions on lung function suggests that restraint which involves bending

the restrained person or placing body weight on them has more effect on breathing than a face-down position alone.

There is a degree of controversy among researchers regarding the extent to which restraint positions restrict breathing. Some studies of the effects of restraint on breathing and oxygen levels indicate the effect was limited. Others point out that deaths in real life situations occur after prolonged, violent resistance which has not been studied in simulations. Positional asphyxia may also occur as a result of accident or illness.

Causes

The general cause of positional asphyxia is pressure on the ribcage, from front or back, or upward pressure on the diaphragm which prevents adequate expansion of the lungs. In terms of lawful force guidelines, restriction of breathing falls under 'impairment of bodily functions' and can easily occur during the immobilisation or restraint/handcuffing process.

Specific causes include:

- When standing, pressure against both chest and back simultaneously, or when a person is against an immovable object and unrelenting pressure is applied to either the chest or back.
- Applying handcuffs to a person whose physique will cause chest compression when they are forced into an unnatural position. (For example, a body builder with extremely well developed chest, arms, back and shoulders.)
- When a person is lying on the ground and unrelenting pressure is applied to the uppermost section of the torso, such as kneeling or lying on the persons back or chest.
- When an extremely overweight person has been placed face down on the ground, their own body weight can cause the abdominal body mass to press inward on their intestines and the diaphragm to press against the lungs, reducing breathing capacity.

- Forcing and holding a seated person in an 'upper torso forward' position, to a degree where the lungs cannot adequately expand during breathing.

Recommendations

Positional asphyxia is a potential danger when using some physical restraint techniques. The physical restraint of subjects, especially those resisting, should be undertaken only when absolutely necessary, and then only with extreme care. Restraint strategies should be used that do not apply pressure to the subjects torso, neck or throat. Restrained subject's, should be seated, or kept standing, not left on the ground. If circumstances are such that the restrained person must stay on the ground, they should be placed on their side, instructed to remain in that position, and kept under careful observation.

There are several plausible strategies for prone restraint that provide appropriate control of a resistive subject without any requirement to place pressure on any part of the torso. In addition to training in these strategies, officers should also engage in multi-officer drills that involve team-orientated solutions in a coordinated and professional manner.

Excited Delirium

Excited Delirium (ED) is an infrequently occurring but serious medical condition that can result in death. For officers, however, the circumstances look nothing like a typical medical situation.

ED death, associated proximal to restraint, is not just a phenomena experienced by public safety personnel, but also in psychiatric and geriatric care facilities. ED is becoming increasingly recognised as a medical emergency and the reasons for ED deaths are very complex and multi-factored.

Sudden and unexpected deaths proximal to restraint fall into two specific categories:

1. Subjects die from conditions that leave evidence readily apparent at autopsy.

2. Subjects die and there is insufficient evidence to establish a cause of death at autopsy.

There appears to be three specific groups of people who are most prone to sudden and unexpected ED death proximal to restraint:

1. People suffering from mental illness (bipolar, schizophrenia).
2. Chronic illicit stimulant substance abuse users (cocaine, methamphetamines, marijuana, alcohol).
3. A combination of mental illness and substance abuse.

ED is most often associated with substance abuse or mental illness. When officers deal with those experiencing ED, both mental illness 'manias' and drug induced psychosis often present outwardly in the same manner. Based on the basic level of medical training provided to officers, it is unreasonable to expect them to make any medical assessment to differentiate between the three causes of ED.

ED is coming to be recognised as a medical emergency because it is associated with a number of detrimental physiological effects, including overheating or hyperthermia, a change in blood acidity that can be life-threatening, electrolyte imbalances, and a breakdown of muscle cells and leaching of the cellular contents into the blood stream. This can all make the heart susceptible to arrhythmia and ventricular fibrillation. ED is a medical emergency that requires acute medical care.

It often requires several officers to subdue and control an individual who is experiencing ED, especially if the subject is otherwise in good physical condition. The typical ED death involves the subject slipping into a state of sudden tranquillity, either during or after the struggle. Often, the subject has stopped breathing. Efforts to revive the individual are usually futile.

Recognition

Incidents of ED often eventuate from reports of property damage or unusual behaviour. The most frequently involved group comprises males between the ages of 30 and 40, although reported cases range from teenagers to the elderly. The condition is believed to be extremely rare in females.

The common behaviours related to ED include:

- Unbelievable strength and endurance

- Imperviousness to pain
- Effective resistance against multiple officers
- Subject presents partially clothed or naked
- Aggression, bizarre and violent behaviour
- Hyperactivity
- Extreme paranoia
- Incoherent shouting
- Grunting or animal-like sounds while struggling with officers.

In addition to these behaviours, the following characteristics may also be present:

- Perspiration (subjects are often drenched in sweat. Occasionally they will not be sweating at all, usually due to side effects with certain mental health medications)
- Foaming at the mouth, drooling
- Dilated pupils.

Recommendations

The operational objective for dealing with ED is to admit the subject into medical care quickly and safely. Medical treatment cannot begin, however, until the subject has been brought under control, and effecting physical control may be dangerous and difficult. The public safety and medical response will be most effective if everyone shares an awareness of the issues and a plan is developed in advance for handling ED incidents.

EMS coordination—ED is a medical emergency that presents itself as a public safety problem. If the incident involves probable ED, medical personnel should be dispatched and wait at a safe distance until the individual is controlled.

Containment—unless there is an immediate threat, officers should contain the subject and the scene. Unless unavoidable, officers should not approach the subject until back up (if available) and medical personnel are on the scene. While it is uncertain where the greater risks lie for ED subjects (the struggle process or the passage of time for back up to arrive), the restraint process will be safer for officers if adequate back up is on hand.

Control options—agencies should consider in advance what options might be appropriate for controlling ED subjects (recognising that every case is different). For tactics, consider that ED is often characterised by superhuman strength and imperviousness to pain.

- Empty hand techniques should be employed as part of a multiple-officer team.
- OC spray may not work on an individual who is unresponsive to pain.

• Impact techniques, such as baton strikes, achieve control through mechanical intervention and pain compliance, but their effectiveness may be diminished on subjects unresponsive to pain.

• CED (conductive energy devices, such as the Taser) may be effective because of their ability to temporarily override the central nervous system. To mitigate the risk of multiple CED applications and ED death, use a single CED application before the subject is exhausted. If using a CED device, it should not be used as pain distraction in dealing with ED individuals.

Restraint positions—people are designed to fight what is in front of them, so officers are trained to place individuals into a prone position because it affords safety and control advantages. However, the prone position may affect breathing, and this concern is of heightened importance with ED. It would be optimal to place the subject on their side once control is achieved if this can be done without creating unreasonable risk. If the subject is still combative, even if handcuffed, further prone restraint may be indicated.

Transportation—once control is achieved, the objective for officers is to get the subject to medical care as soon as possible. They should be transported to a hospital in an ambulance, not in a car, unless waiting for medical personnel would cause unreasonable delay.

The unfortunate reality is that a fatality may still occur regardless of how officers respond to the situation. Officer actions are a result of training and experience and, in the absence of either (or both), officers are likely to react out of fear or ego, neither of which create favourable conditions for a successful outcome in a violent confrontation.

Research and training are continuing in the public safety and medical communities. Public safety agencies should continuously monitor for new information about these topics to ensure greater safety of officers, the public and resistive individuals. ■

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