



Death in a hobble restraint

A *CMAJ* paper on unexpected death related to physical restraint¹ has attracted interest in Europe following a tragic death here. A 25-year-old Nigerian man who had sought asylum in Austria died in restraint on a flight from Austria to Bulgaria; he had been under the observation of 3 police officers. He was on the flight because his application for asylum had been rejected by Austrian authorities and he was being deported. The man had been violently agitated and hyperactive because he strongly opposed being forced to leave Austria. The main risk factors cited by Micheal S. Pollanen and colleagues¹ for unexpected death in restraint (a psychiatric disorder or cocaine-induced psychosis causing excited delirium) were not reported by police authorities in this case.

We have investigated cardiopulmonary response to hobble restraint in the upright and prone position in 6 male volunteers in a randomized crossover trial.² The subjects remained calm during the study protocol. After hobble restraint in the prone position the mean forced vital capacity decreased by 39.6%, the mean forced expiratory volume dropped by 41.0%, and the mean end tidal carbon dioxide increased by 14.7%. The mean heart rate dropped by 21.3%, the mean systolic blood pressure decreased by 32.3%, the mean diastolic blood pressure fell by 26.1% and the mean cardiac output decreased by 37.4% (for all reported changes, $p < 0.01$).

The use of hobble restraints in the prone position clearly leads to a dramatic impairment of hemodynamics and respiration even in nonagitated subjects, and this should probably be considered as a main contributing factor in cases involving restraint-related deaths. As Pollanen and colleagues recommend, restraints should be used only when the situation clearly justifies their use and when there is no other way to

prevent physical harm to the person in custody or others. In all such cases, careful observation is mandatory. If these recommendations had been followed, the life of this young Nigerian man would probably have been saved.

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References

1. Pollanen MS, Chiasson DA, Cairns JT, Young JG. Unexpected death related to restraint for excited delirium: a retrospective study of deaths in police custody and in the community. *CMAJ* 1998;158(12):1603-7.

2. Röggl M, Wagner A, Muellner M, Bur A, Röggl H, Hirshl MM, et al. Cardiorespiratory consequences to hobble restraint. *Wien Klin Wochenschr* 1997;109:359-61.

Correction

In the abstract of a recent article by Sylvie Perreault and colleagues¹ units were mistakenly introduced for the ratios of total cholesterol to high-density lipoprotein cholesterol. The ratios should be dimensionless. We apologize for this error.

Reference

1. Perreault S, Dorais M, Coupal L, Paradis G, Joffres MR, Grover SA. Impact of treating hyperlipidemia or hypertension to reduce the risk of death from coronary artery disease. *CMAJ* 1999;160(10):1449-55.

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