
Assessing the cause of death in bodies found in water

MD, PhD Philippe Lunetta^{1,2}

Department of Forensic Medicine, University of Helsinki, Finland¹, Injury Prevention Unit, National Institute for Health and Welfare, Finland²

Background

Due to inadequate vital registration systems and low or inexistent post-mortem investigations, in many low and middle income countries, verbal autopsies, based only on interviews with family or associates, are the only tool to assess the cause of death, including injury and drowning. In many instances, also in high-income countries, a diagnosis of drowning will be based merely on circumstantial evidence and external examination of the victim. However, diagnosis of cause of death in bodies found in water can be a particularly challenging task even with a full medico-legal autopsy performed by an experienced forensic pathologist. A wide range of possibilities must be considered: diseases, injuries, or intoxications can all be among the potential causes of death in water or may have triggered or contributed to death by drowning. Drowning can also be the result of an intentional action, either suicide or homicide.

The Finnish Act on the Inquest into the Cause of Death (459/73) allows extensive medico-legal investigation into cause of death, with virtually 100% of the bodies found in water undergoing police investigation and a full medico-legal autopsy. This improves the possibility to substantiate the diagnosis of drowning, reveal deaths in water other than drowning, and distinguish between unintentional drowning and drowning by suicide or homicide.

Aims

The aims of this presentation are to illustrate: a) the diagnosis of death by drowning and its contributing factors by means of medico-legal autopsies and specific post-mortem investigations, b) natural and injury deaths in water other than drowning, c) non-accidental drowning deaths.

Methods

Up-to-date review of the medico-legal diagnosis of drowning, presentation of selected case studies and medico-legal investigations of more than 2000 bodies found in water investigated during the period 1975 to 2010 at the Department of Forensic Medicine, University of Helsinki (Finland).

Conclusions

The precise cause and manner of death in water can be established only by a thorough assessment of full autopsy findings integrated by analysis of the victims' individual profile and the environment and circumstances surrounding death. In many countries, due to lack of resources or national legislation, no autopsies are performed or only rarely performed in such cases. However, also in these countries, experts and professionals involved in water rescue and treatment and in drowning surveillance and prevention – including those developing and implementing verbal autopsies on drowning – should be aware of the challenges inherent in the diagnosis of drowning and of the possibility of deaths in water other than unintentional drowning.

Corresponding Author

Dr Philippe Lunetta
Associate Professor
National Institute for Health and Welfare, Injury Prevention Unit
& University of Helsinki, Dept. of Forensic Medicine
Kytösuontie 11 Helsinki South Finland Finland 300
Email: philippe.lunetta@helsinki.fi
Telephone: +358 9 19127447