



### H92 Medicolegal Issues in a Death Due to Duchenne's Muscular Dystrophy

Joseph A. Prahlow, MD, Western Michigan University School of Medicine, 300 Portage Street, Kalamazoo, MI 49007; and Philip Vasin Bystrom, BA\*, Western Michigan University School of Medicine, 145 E Exchange Place, Apt 2A, Kalamazoo, MI 49007

After attending this presentation, attendees will: (1) recognize the importance and appropriateness of performing medicolegal autopsies in certain cases involving chronically disabled persons; (2) recognize the importance of medicolegal death investigation involvement in certain cases involving medical therapy-related complications; and, (3) understand the challenges involved with manner-of-death certification in deaths due to therapy-related complications.

This presentation will impact the forensic science community by focusing on several important issues that can present challenges for those within the death investigation community. These challenges include the investigations of deaths involving chronically debilitated individuals, deaths related to medical intervention/therapy, and the controversies related to certifying the manner of death in such cases.

An important public health function of medicolegal death investigation involves the identification of deaths that are considered preventable. By implementing preventive strategies based on the identification and reporting of such incidents, it is hoped that similar deaths may be avoided. In order to identify such preventable deaths, it is frequently necessary to perform a medicolegal autopsy; however, there are several groups of decedents in which a medicolegal autopsy is rarely performed. Two such groups include persons who have chronic debilitating conditions and those who die in the hospital with severe underlying disease. Although most of the deaths occurring in these two patient populations do not require medicolegal death investigation or autopsy, it is important to note that, in certain circumstances, the investigation of such cases is entirely appropriate. This report presents a case of death in a chronically debilitated, terminal patient, who died as a result of a complication of medical therapy.

Presented is the case of a 28-year-old male with Duchenne's Muscular Dystrophy who died of complications related to gastric tube dislodgment and subsequent sepsis. The patient was hospitalized for an acute-on-chronic episode of respiratory distress and was put on a ventilator and fitted with a gastric tube. The patient later complained of abdominal discomfort and an exploratory surgery revealed peritonitis. The patient died shortly thereafter under general anesthesia during emergency surgery. Autopsy revealed purulent exudate over the serosal surfaces of the intestines that extended into the mesentery and peritoneal lining. There was focal hemorrhagic exudate that was limited to the area immediately surrounding the gastric tube entrance site. Culture of the peritoneal cavity was positive for *Pseudomonas sp.*

Medicolegal autopsies are often not performed on patients with an underlying chronic debilitating condition if they die in a hospital setting. These deaths are common and expected and it is often assumed that, in most cases, the cause of death is either directly or indirectly related to the underlying condition. There is some merit to this assumption. For instance, a recent two-year-long study of the cause of death in an inpatient hospice program found that all 48 patients autopsied died of causes related to their underlying condition.<sup>1</sup> However, assuming that *all* deaths in this subset of patients can ultimately be traced back to the underlying medical condition leads us to overlook preventable causes of mortality such as complications arising from medical interventions.<sup>2</sup> It is thus unfortunate that medicolegal autopsies are not performed when warranted since they can help to identify sources of treatment-related deaths. This would ultimately aid in quality improvement resulting in better outcomes for future patients.

In addition to providing an impetus for discussing deaths in chronically debilitated persons and deaths related to medical intervention, the presented case highlights a classic dilemma faced by those who complete death certificates. Manner-Of-Death (MOD) certification is not an exact science and such determinations can vary. Although general guidelines for MOD determination have been promulgated by the National Association of Medical Examiners, variation remains.<sup>3</sup> The current case raises questions concerning the most appropriate MOD ruling in such cases.

In conclusion, medicolegal autopsies could help improve hospital outcomes in patients with underlying chronic debilitating diseases. The cause of death in these patients is often thought to arise as a natural sequelae of the chronic underlying disease. Performing a medicolegal autopsy on these patients has the possibility of identifying treatment-related deaths that would hopefully improve hospital outcomes.

#### Reference(s):

1. Abdel-Karim I.A., Sammel R.B., Prange M.A. Causes of Death at Autopsy for an Inpatient Hospice Program. *J Palliat Med.* 2007. Aug 10 (4): 894-8.
2. Prahlow J.A. Investigation of Deaths of Chronically Disabled Persons and Institutionalized Persons. *Acad Forens Pathol.* 2014. Apr (3): 262-89.
3. Hanzlick R., Hunsaker J.C., Davis G.J. A Guide for Manner of Death Classification. *National Association of Medical Examiners.* 2002.

#### Medicolegal Autopsy, Duchenne's Muscular Dystrophy, Forensics