G99 Stairway Related Deaths: An Analysis of Autopsy Findings of Individuals Found Dead at the Bottom of a Stairway

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After attending this presentation, the attendee can expect to learn the characteristics of autopsy findings of individuals found dead at the bottom of a stairway.

This presentation will impact the forensic science community by showing that it is not possible to predict which individuals found dead at the bottom of a stairway died from injuries and which died from non-traumatic causes based on age, cutaneous injuries, or a past medical history of a disease that could cause sudden death.

Cases from the Sparrow Health System Forensic Pathology Department (Lansing, Michigan) database were searched for deaths of individuals found dead at the bottom of a stairway. Twenty-seven such cases were identified; all of the deaths had full autopsies and twenty-six had blood drug screens.

The cases were divided into two groups: those whose deaths were caused by injuries consistent with a fall and those in which no significant injuries were identified. The age range, natural diseases, toxicology findings, and external injuries were compared between the groups. For the group of individuals who died due to a fall, the types of lethal injuries were characterized.

Twenty-seven deaths investigated since January 1, 2000 were of individuals who were found dead at the bottom of a set of stairs. Nineteen of the twenty-seven died from injuries associated with a fall and eight of twenty-seven were free of significant injuries.

Of the eight individuals who were found dead at the bottom of a stairway, but had no significant injuries, six were men and two were women. The age range was 48-87 years with an average age of 63 years. Six of the eight decedents had cutaneous head injuries. Six of the eight individuals had cutaneous injuries of the torso and/or the extremities. None of the individuals were free of cutaneous injuries. Seven of the eight deaths in this group resulted from atherosclerotic cardiovascular disease and/or hypertensive cardiovascular disease. One death resulted from a mixed drug intoxication with citalopram and ethanol. Cocaine intoxication was a contributing factor in one of the deaths due to cardiovascular disease. The drug screens in the remaining six were negative for significant findings. Four of the eight individuals in this subset had a reported significant chronic medical condition, known before the autopsy, that might explain a sudden death.

Of the nineteen individuals who died from injuries related to a fall, 15 were men and 4 were women. The age range of this subset was 30-93 with an average age of 63 years. Eighteen of the nineteen deaths in this category were caused by craniocerebral injuries. The one death in this group not caused by head injuries was a 93-year-old woman whose death resulted from a left femur fracture and multiple left rib fractures. Thirteen of the eighteen had cutaneous head injuries, and three of these thirteen had cutaneous head injuries and blood draining from the external auditory canal(s). Fifteen of the nineteen individuals had cutaneous injuries of the torso and/or the extremities. There were no cases of individuals without any cutaneous injuries.

Of the nineteen individuals who died from injuries due to a fall, the blood drug screens in seven were negative for significant findings. Ethanol was present in the blood of eleven of the twelve with positive findings and ranged from 0.04 – 0.30% (in six of these eleven, the level was greater than 0.20%). THC was present in the twelfth case with significant toxicology findings.

Of the eighteen individuals with lethal craniocerebral injuries, most had skull fractures, however, none of the individuals with lethal injuries had depressed skull fractures.

Ten of the nineteen individuals in this subset of individuals who died from injuries had a reported significant chronic medical condition, known before the autopsy that might explain a sudden death.

Conclusions: The majority of individuals found dead at the bottom of a stairway have sustained lethal injuries. The factors that were evaluated (age of decedent, past medical history, presence of cutaneous injuries) are not predictive of lethal internal injuries identified at autopsy. A very high percentage of individuals found dead at the bottom of a set of stairs have positive postmortem drug screens, primarily alcohol.

Stairway, Autopsy, Fall

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