



H116 Anatomical Distribution and Autopsy Features of Gunshot Injuries to Discriminate Between Homicides and Suicides: A Five-Year Retrospective Study From the Onondaga County Medical Examiner's Office

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Learning Overview: After attending this presentation, attendees will better understand the most common features of fatal gunshot wounds encountered in homicides and suicides.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by illustrating the most common body regions affected by gunshot wounds and the relevant autopsy features, showing their relationship with the manner of death.

Firearm-related injuries are commonly encountered by forensic pathologists worldwide. In these fatalities, a careful evaluation of all the evidence is mandatory to prevent wrong conclusions concerning the manner of death. The analysis of the location of the gunshot wounds can be useful to understand the circumstances of death. This study will provide data to support an association between a specific wound location and the manner of death.

The files of the Onondaga County Medical Examiner's Office were searched for deaths due to gunshot wounds between January 2012 and December 2016. Only cases in which gunshot wounds were the primary cause of death and in which a clear and reliable manner of death was reported were included in the study. Undetermined deaths were not considered as part of study population. The investigative report, the autopsy report, and postmortem toxicological studies were reviewed in each case. The following parameters were recorded from the files: manner of death, gender, race and age, firearms and bullets type (if available), number and sites of entrance and exit wounds, shooting distance, internal bullet pathway, blood drugs and/or alcohol concentration, and investigative narratives. The obtained data were then subcategorized as to the manner of death (suicide, homicide, and accident). The information detected on the autopsy report was used to create a graphic reconstruction of the anatomical distribution of the gunshot wounds on the body surface.

A total of 5,231 accepted cases in the studied period were found in the Onondaga County Medical Examiner's Office database, including 626 suicides, 208 homicides, and 2,275 accidents. Of these, 347 deaths due to gunshot wounds were identified and were then subcategorized based on the manner of death, showing: 238 suicides (~69%), 108 homicides (~31%), and 1 accident (<1%). A thorough discussion of the results, including graphical models showing the most common location of the injuries, and demographic data will be presented.

This study will illustrate distinct differences in suicidal and homicidal wounds that should be considered while investigating gunshot wounds related deaths. The autopsy findings, together with the scene findings, the investigative report, and the medical history of the victim, can help determine a reliable manner of death.

Gunshot Wounds, Manner of Death, Autopsy