



### E56 Multiple Self-Inflicted Gunshot Wounds: Case Series With a Review of Literature

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After attending this presentation, attendees will understand that a small minority of suicides — less than 1% of all suicides in Wayne and Monroe counties in the state of Michigan — do involve more than one gunshot wound, highlighting that, although rare, the presence of more than one gunshot wound is not a sole hallmark of homicide and requires an open mind when encountering such cases.

This presentation will impact the forensic science community by presenting the largest case series of multiple self-inflicted gunshot wounds. It will specifically impact forensic professionals tasked with determining or assisting in the determination of manner-of-death by reminding them not to immediately rule out suicide in deaths caused by multiple gunshot wounds, whether or not notes are left, as this can occur, evidenced by more than a decade of suicide deaths from a major American metropolitan area.

Suicide by firearm is common and usually ends in a single fatal shot. When two or more gunshots are present, it is frequently viewed as homicide by investigators, police, and the public. This study investigates the incidence, patterns, frequency, and different characteristics of suicide by two or more gunshot wounds, during the period of 2000-2011 in Wayne and Monroe counties. A total of 2,212 cases of suicide were reported and the leading method was by gunshot wound (1,066). Out of those 1,066 cases, there were 17 (1.5%) with multiple gunshot wounds. Nine of these multiple cases had two gunshot wounds and eight cases had more than two gunshot wounds. Fifteen cases involved rifled weapons and two cases involved shotguns. There were two female and 15 male decedents. People 41-50 years of age represented the most suicides involving multiple gunshots. A suicide note was left behind by three (18%) of the decedents, and 14 (82%) did not leave a note. The most common site of entrance was the chest, followed by gunshot wound to the head. In the context of manner-of-death determinations, the characteristics of fatal gunshot wounds along with the importance of keeping an open mind by exploring all physical possibilities during forensic autopsy, are emphasized.

Since multiple gunshots are such a hallmark of homicide, establishing that they are also a fact of suicides is essential, given that Wayne and Monroe counties have a slight rate of occurrence. Of all suicides between 2000 and 2011, less than 1% (17/2,212) had multiple shots. This concurs with Mernerides et al. in noting post-traumatic injury can occur and when it does, may be crucial in differentiating homicide from suicide: *Immediate incapacitation does not occur in every fatal gunshot wound that penetrates the head or perforates the heart.*<sup>1</sup> A study from Lorin on gunshot wounds emphasized the need for careful examination of multiple gunshot wounds for the entrance and exit wounds, estimation of close range, and vital reactions to provide arguments for or against suicidal intent.<sup>2</sup> A study from Hejna et al. discussed the ability to act in cases of multiple gunshot wounds due to suicide — a frequently asked question during the due course of an investigation and in the courts; the study notes that the character and localization of wounds determine one's ability to act following the gunshot wound.<sup>3</sup> Racette et al. reported a rare case of suicide with drowning following two self-inflicted, non-lethal gunshot wounds to the head — this study notes a need for complete and thorough investigation when complex methods for suicide are used.<sup>4</sup>

#### References:

1. Mernerides A, Zagelidou E, Leontari R. An unusual case of multiple-gunshot suicide of an alcohol-intoxicated cancer sufferer with prolonged physical activity. *J Forensic Sci* 2013 Mar; 58:2:537-539.
2. Lorin de la Grandmaison G. Gunshot wounds: forensic pathology. *Ann Pathol*. 2012 Feb;32:1:33-9.
3. Hejna P, Safr M, Zátopková L. The ability to act — multiple suicidal gunshot wounds. *J Forensic Leg Med*. 2012 Jan;19:1:1-6.
4. Racette S, Sauvageau A. Suicide by drowning after two gunshots to the head: a case report. *Med Sci Law*. 2008 Apr;48:2:170-2.

#### Suicide, Gunshot, Multiple