



H1 Circumstances and Injuries in Female Homicide Victims of Strangulation: A Four-Decade Review of 143 Cases in King County, Washington

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Learning Overview: After attending this presentation, attendees will be able to: (1) describe the circumstances surrounding homicides of female victims of strangulation, (2) list the most reliable physical evidence supporting a diagnosis of strangulation, and (3) explain why females are especially vulnerable to this modality of violent death.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing data from a large case series of female homicide victims that can help in identifying circumstances and physical evidence characterizing this modality of death of which females are especially vulnerable.

Strangulation is a cause of death that is often challenging to establish because of relatively minor anatomic injuries, obscuring postmortem changes, and coexisting injuries, natural disease, or intoxication. Previous studies have identified characteristic findings in both decedents and surviving victims, demonstrating considerable variation in the anatomic findings, as well as the difficulties in proving death or injury in strangulation. Thus, it is important to review a large series of cases to more completely understand the complexities inherent in making a diagnosis of strangulation.

This study is a retrospective review of homicidal strangulation of female homicide victims examined in the King County Medical Examiner's Office (KCMEO) from January 1979 to December 2016. For the cases identified, demographic information was collected from the medical examiner files, investigative reports were used to assemble circumstantial information, and autopsy reports were abstracted to compile anatomic injuries. Data from the Washington Attorney General's Office Homicide Investigation Tracking System supplemented the medical examiner information regarding perpetrator and circumstances. The current KCMEO electronic database was queried to compare the number of female strangulation homicide victims relative to those of males from 2000 to July 2019.

Over the time period of 1979 to 2016, there were 143 female homicide victims of strangulation used for this study. In the later time period used to compare the number of male to female strangulation victims, there were 30 females and 9 males. In the 143 cases of female victims, the highest proportion of cases (29%) were in the age range of 20–29 years; 14% of cases were in ages older than 70 years. Sexual motivation was prevalent in the younger age group, whereas robbery prevailed in the older age group. The majority of deaths were in private places (65%) and the perpetrator was known to the victim in 80% of cases. Of the known circumstances surrounding the homicide, 25% were related to domestic violence; sexual assault was evident in at least 25%. Overall, manual strangulation was the predominant method of strangulation; however, in cases with sexual motivation, ligature strangulation predominated. In approximately 73% of cases, strangulation alone was responsible for death; other modalities of injuries were present in the remainder, most commonly blunt force injury.

Petechiae were documented in more than 80% of the cases, nearly always in the conjunctivae; postmortem decomposition likely obscured their appearance in other cases. Internal neck injuries were evident in about 92% of the cases, mostly in the form of soft tissue and strap muscle hemorrhages (86%); thyroid cartilage fractures were noted in 38% of the cases, and hyoid fractures occurred in 25%. The latter especially were highly correlated with ages older than 40 years.

The results of this study are largely consistent with previous studies, showing that female victims of strangulation outnumber those of males by a ratio of at least 3:1. Circumstances and venues of domestic violence account for a substantial proportion of female homicidal strangulations, and sexual motivation is also a major factor, readily explaining why females are especially vulnerable to this modality of death. Conjunctival petechiae and soft tissue/muscle neck injuries remain the best evidence supporting a diagnosis of strangulation, while cartilaginous or hyoid fractures are much less common, especially in younger victims.

Strangulation, Female, Injury Patterns