

H57 Self-Immolation in a Dumpster

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Learning Overview: After attending this presentation, attendees will recognize the characteristics of suicide by self-immolation, review burn intensity and distribution from accelerant use, and evaluate the significance of a slight elevation of carboxyhemoglobin in self-immolation deaths.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by documenting a death by self-immolation in a dumpster and reviewing characteristic autopsy and toxicology findings when investigation and autopsy support a manner of suicide, rather than homicide followed by attempted concealment.

Bodies found on fire in dumpsters may be homicide victims with postmortem attempts at concealment. This case report details the scene investigation and autopsy of a suicidal death by self-immolation in a dumpster.

Firefighters called to a fire burning in a dumpster behind a business discovered a female body on fire in the dumpster, with very little other trash, most of it charred; she was pronounced dead on scene. She carried no identification; her clothing was lost to charring; a large tattoo on her left arm remained intact. She was recognized as similar in appearance to a woman who had been seen sitting crying on the curb in front of the store, about 20 minutes earlier.

Store surveillance video showed her sitting on display furniture, then stealing two bottles of charcoal lighter fluid from another display, followed by walking toward the area where the dumpster was located. Within minutes, smoke was seen rising from the area. No other person entered the area before the firefighters arrived.

At autopsy, she had deep burns to the lower extremities and back; there was charring of the left buttock and across the posterior legs. Superficial burns of the anterior torso and upper extremities were observed; the head was mostly spared. Soot deposits were noted across both the front and the back of the body. She had no detectable injuries to her wrists, shoulders, mouth, or face. Internal examination showed a small amount of mucoid soot in the trachea; there was no trauma or significant natural disease. Identification by fingerprint comparison gave her age as 41 years. Postmortem toxicology demonstrated no drugs of abuse or ethanol. The carboxyhemoglobin was modestly elevated at 14% saturation. Death was attributed to thermal injuries, and the manner was deemed suicide. No suicide note was discovered.

Self-immolation is an uncommon suicide method in Europe and the United States.^{1,2} Decedents in Greece who committed suicide by self-immolation were predominantly elderly, often showed poorly controlled mental disorders (mostly affective and adjustment disorders), and usually chose outdoor locations that were either secluded or private.¹ This decedent chose to perform her self-immolation in an outdoor location that was secluded behind a building. A paper aggregating 46 self-immolation suicide reports found that European and North American victims were most often in their 30s and 40s; 10 out of 18 victims showed carboxyhemoglobin below 10% saturation, while several of the remaining eight were at low concentrations from 10.5% saturation upward, attributed to flash fire deaths.² Self-immolation may be performed with the aid of accelerants; Spitz reported that this often results in patchy charring, with some areas charred deeply and other areas significantly less so; even low levels of carboxyhemoglobin are significant in flash fire deaths.³ A low carboxyhemoglobin level implies rapid death from airway damage and extreme heat flux; carbon monoxide accumulation from open flames may also be impaired by excellent ventilation.

The autopsy findings reported here, supported by the 14% carboxyhemoglobin saturation, are consistent with death from thermal injuries sustained in a flash fire; the distribution of the burns is consistent with self-application of accelerants. Although no laboratory analysis was performed for accelerants, the stolen containers, the patchy charring and burn distribution, and the low carboxyhemoglobin are supportive of accelerant use in a self-immolation suicide. The video evidence provided final confirmation that this suicide by self-immolation in a dumpster was not a homicide followed by attempt at concealment of the body.

Reference(s):

1. Papadodima S.A., Karakasi M.V., Pavlidis P., et al. Self-immolation suicide in Greece: A forensic psychiatric autopsy study between 2011 and 2019. *J Forensic Sci* 13 July 2020 (online early view) |<https://doi.org/10.1111/1556-4029.14498>.
2. Simonit F., Da Broi U., Desinan L. The role of self-immolation in complex suicides: A neglected topic in current literature. *Forensic Sci Int* Jan 2020; 306(11073). <https://doi.org/10.1016/j.forsciint.2019.110073>.
3. Spitz W.U. Thermal Injuries. In *Medicolegal Investigation of Death*, 4th ed. (Springfield, Illinois: Charles C Thomas. 2006),747-782.

Forensic Sciences, Self-Immolation Suicide, Dumpster Fire