



G18 It Must Be Suicide! Methodological Approach in Atypical Hanging With Handcuffs

Sara Vita, MD, Viale degli Aviatori 1, Foggia, ITALY; Monica Salerno, MD, PhD, Ospedale "Colonnello D'Avanzo," Viale degli Aviatori, 1, Foggia 71100, ITALY; Francesca Maglietta, Viale degli Aviatori, Foggia, ITALY; and Gabriela Perilli, MD, Viale degli Aviatori 1, Ospedale "Colonnello D'Avanzo," Foggia 71100, ITALY*

The goal of this presentation is to show the difficulties in distinguishing between suicide or homicide when an atypical hanging occurs and how to collect undisguisable features.

This presentation will impact the forensic science community by demonstrating the relevance of a complete methodological approach in all cases of hanging in which suicide is doubtful. A complete crime scene investigation has to be followed by autopsy and lab tests (histology, immunohistochemistry, toxicology). Radiological investigations should also be performed.

Hanging is one of the most commonly used methods for suicide worldwide. Distinguishing a potential homicidal hanging from a suicide poses difficult challenges for forensic pathologists. A variety of staged crime scenes are encountered by investigating officers. A suicide may be staged as a homicide by family members or friends in an attempt to avoid embarrassment or for other personal, social, or religious reasons. Staging a suicide as a homicide may be a final effort by the victim to gain popularity, attention, take revenge against friends or family, or to ensure his killing. In contrast, some suicidal crime scenes could be highly suspicious for homicide. A case of atypical hanging is presented. A 52-year-old man was found lifeless in his house hanging from a rope wrapped around his neck and anchored on a pipe in the ceiling. His wrists were bound by a pair of handcuffs. His arms were extended and adducted to the abdominal wall. His trousers were down to his knees. His clinical history was remarkable for depressive syndrome with several unsuccessful suicide attempts. The prosecutor's office alerted the forensic pathologist and a detailed crime scene investigation was performed. House inspection was unremarkable and no suicide note was found. The body temperature was 31°C, rigor mortis was present, and fixed hypostasis was observed in the upper and lower limbs. A ligature mark encircling the neck with bruises was described at external examination. Red-bluish areas were found on the wrists after the handcuffs were removed. Subconjunctival hemorrhagic petechiae were also recorded. Traumatic injuries were excluded after external examination and Computed Tomography (CT) scan investigation. A complete postmortem examination was performed the next day. Mild cerebral and pulmonary edema with white foam in the main bronchi were detected. The right sternocleidomastoid muscle had a mild focal hemorrhage. Pulmonary edema, congestion, and focal pulmonary atelectasis were identified by microscopic analysis of routine Hematoxylin-Eosin (H&E) stains. The microscopic observation of the skin sections from the ligature marks revealed intra-epidermal mild leukocyte reactions and alteration of the musculature in the form of Zenker's necrosis. In addition, immunohistochemical staining of skin samples was performed utilizing antibodies to antitryptase, fibronectin, TNFalpha, IL-6, IL-8, IL-10, MCP-1, IL15, IL1beta, CD45, CD4, CD3,CD8, CD68, CD20, and CD15 to confirm vitality of reactions in the ligature mark. Toxicological analysis on blood and urine were unremarkable. Mechanical asphyxia by suicidal hanging was indicated as the cause of death.

Binding the wrists to prevent rescue attempts is rare in suicidal hanging and is rarely reported in forensic literature. These cases represent a difficult challenge in distinguishing between homicide or suicide. A thorough postmortem investigation will allow the pathologist to make the correct determination.

Atypical Hanging, Handcuffs, Suicide-Homicide