



### E37 “V for Vendetta”: A Hidden Revenge Murder

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**Learning Overview:** The goal of this presentation is to demonstrate the relevance of a complete crime scene investigation and the meticulous postmortem analysis to define the differential diagnosis between suicidal or homicidal hanging.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by giving an useful example of the meticulous forensic approach to conduct during crime scene investigation and how it must be combined with a following multidisciplinary investigation.

In the literature, hanging has been reported principally as a suicidal modality or also as an accidental death. Homicidal hanging is exceptionally rare. The characteristics of ligature marks can be very important to distinguish between a suicidal or postmortem hanging but it cannot be the only nor the main element of discrimination. This presentation illustrates a failed attempt to hide a violent murder in a suicidal hanging, showing the importance of a complete and multidisciplinary forensic investigation.

A 48-year-old Tunisian laborer was found lifeless next to a farmhouse, suspended by two ropes wrapped around his neck at one end and anchored on a metal rod to the other, which was itself placed between two concrete poles. The victim's head was covered by clothes. The local prosecutor requested the presence of the forensic team to perform a complete crime scene investigation. At the crime scene, policemen found a blood-stained stick in the farmhouse and drag marks on the ground around the house and next to the corpse.

The external examination was confusing: the body was covered by purple bruises, probably caused by an external blunt force trauma. Some typical signs of a suicidal hanging (such as the double ligature mark around the neck, swollen face, and protruding tongue) were also present. The Computed Tomography (CT) scan demonstrated multiple fractures of the facial bones and of the third cervical vertebra. At the autopsy, diffuse subarachnoid and intraventricular hemorrhages and multiple rib fractures were found. Tissues of the neck revealed diffuse hemorrhagic areas at subcutaneous tissues and at the left sternohyoid and mylohyoid muscles.

The histological examination, performed using Hematoxylin-Eosin (H&E) staining, revealed poly-visceral stasis in all samples; brain samples showed extensive subarachnoid and intraventricular hemorrhages and cytotoxic and vasogenic edema. The lung specimens demonstrated a massive pulmonary edema. The histological examination of ligature-marked skin and of cervical muscle samples revealed a massive presence of erythrocytes. The same skin samples were also studied with immunohistochemical technique using anti-CD15, anti-tryptase and anti-IL15 antibodies, that appear to be reliable parameters in the determination of ligature mark vitality. Results showed a dermal strong positivity to CD15, tryptase, and IL-15 in the marginal zones above and below the hanging marks. Toxicological examination revealed alcohol in the blood (154.91mg/dL).

According to these findings, the cause of death was attributed to homicidal hanging. In fact, despite multiple and massive blunt injuries on the head and thorax, the victim was alive at the time of hanging, because of the vital reaction of the ligature mark. Afterward, police identified the murderer, a Tunisian man, retired from the Foreign Legion. He revealed he had hit the victim with kicks and punches, then with several sticks and wooden shelves. At last, he hanged him to simulate a suicide. He then reported murdering the victim as revenge for all the mistreatment he had suffered by the victim during the period they passed together in the Foreign Legion. Indeed, the police discovered that the victim was a senior military officer in the Legion and the murderer was only a soldier.

In conclusion, the use of hanging to commit a homicide is very rare and a difficult interpretation finding for a forensic pathologist. In fact, the vitality of the ligature mark leads to a suspicion of suicide; generally, homicidal hanging was used in the past for executions, and it is really difficult to suspend a person against his will. In this case, it was possible to perform a murder because the victim was stunned by the alcohol and blows. The complete crime scene investigation conducted allowed finding the blunt instrument dirty with the victim's blood, the drag marks of the corpse; combined with a complete postmortem investigation, this prevented forensic pathologists from making mistakes.

#### **Homicidal Hanging, Forensic Approach, Differential Diagnosis**