



### **F1 Carotid Sinus Hypersensitivity, Psychogenic and Vasovagal Syncope, and Homicide: The Importance of Negative Results of Biologic Evidence in Court**

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After attending this presentation, attendees will understand the juridical, jurisprudential, and investigative problems related to sudden death after a physical assault without evidence of trauma on the victim.

This presentation will impact the forensic science community by proposing an interdisciplinary review among jurists, forensic pathologist, judges, and prosecutors to examine discriminating or determining factors in cases of sudden death without positive (biological) scientific evidence.

The problem of a sudden death without physical evidence of trauma or natural pathological condition (e.g., myocardial infarct, brain hemorrhage) is not well known and an extensive case history was reported in 1964.<sup>1</sup>

This presentation proposes a review of these cases in recognition of the modern approach to suspicious death scenes. Recent scientific acquisitions of specialized disciplines are able to interpret the absence of elements as a positive finding. The absence of any positive biological evidence can be considered as evidence itself.

One example of such a case involved a husband who discovered his wife in bed with another man. The lover escaped through the window, and the wife tried to follow him when her husband seized her “by the throat.” She collapsed and died. The autopsy did not reveal any evidence of trauma to the neck.

The only certain element of the case was circumstantial: that of the pressure on the woman’s “throat” by her husband. The author, concluded that the case “could only be explained” by a mechanism of death by inhibition (vasovagal syncope).<sup>2</sup>

The review of the case revealed two critical points: (1) a specific circumstantial element (the pressure “on the throat”); and, (2) the lack of any physical trauma to the victim’s external or internal organs.

In similar cases, it is crucial to understand if the vasovagal syncope provoked by the aggressor is intentional or due to an accident. Different elements need to be considered: predisposing pathologies, lack of postmortem findings, the victim’s age, the reliability of witness statements, and the absence of “functional” causes of death.<sup>2,3</sup> In addition, psychological elements of the crime (such as the motive and deliberate actions of the perpetrator), the scenario in which the death took place, and the degree of the aggressor’s knowledge of human anatomy and physiology. Furthermore, it is important to investigate sudden deaths related to jobs where pressure on the neck can be administered (e.g., physiotherapist, masseur), increasing the risk of vasovagal syncope.

In conclusion, this study suggests that sudden death with negative postmortem findings needs a review not only of the scientific investigation but also of the juridical principles and jurisprudence.

#### **Reference(s):**

1. Nils P.L. Sudden Death of Filipino Men in Hawaii, *Journal of National Medical Association* 1964; 52-4.
2. Herlevsen P., Thorgaard Andersen P. Constitutional Predisposition to Vasovagal Syncope: an Additional



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3. Hadjikoutis S., O'Callaghan P., Smith P.E.M. The investigation of syncope. *Seizure* 2004; 13(8):537-48.

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