



Pathology/Biology Section - 2013

G165 An Unusual Case of Strychnine Poisoning

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After attending this presentation, attendees will learn about strychnine (use and prohibition) and, particularly, strychnine poisoning, which is relatively rare because of its prohibition.

This presentation will impact the forensic science community by the histological and toxicological findings in this poisoning case, which police authorities concluded to be suicide, without finding the container.

Strychnine-related death has been described since the 19th-century. This alkaloid was discovered in 1818. Historically, strychnine was used by the Southeast Asian autochthones on arrows. After its discovery in the occidental countries, the substance was used to destroy animal predators. Synthesis has been possible since 1954. Two toxicity mechanisms are described: the tetanising activity and the paralysing action. It is also a part of curare poisons. Its production has been modified by legislation to protect people against accidental intoxications. In 1999, its use was prohibited in France; since this prohibition, strychnine-related death is rare. The most important issue is knowing the origin of the substance.

A 69-year-old man was found dead at home. A letter was found relating familial conflicts. A bailiff had to visit him because of familial conflicts. External examination found no signs of violence. During the autopsy, a pulmonary edema and a blue substance in the stomach were found. Toxicological analysis measured strychnine at 0.29µg/ml in the blood sample. The blue coloration evoked Taupicine[®], a rodenticide containing 10% strychnine. All these elements suggest a strychnine-related death; however, a specific source has not been found by the police. In the medical history, no previous psychiatric disorder was found. Some relatives spoke with him the morning of his death. He did not exhibit suicidal tendencies.

Strychnine induces seizures with normal consciousness. Death is frequent without emergency care. Accidental, suicidal, and criminal contexts have been described. Strychnine poisoning in children has classically been accidental, whereas, in adults it has been suicidal. Criminal poisoning was described in the 19th-century by a serial killer. It is believed that strychnine could be employed to commit a terrorism attack. Because of its ability to increase pulmonary capacities, strychnine has been used in sports competitions with injections made during the physical activities. Most of the intoxication is secondary to ingestion or inhalation. Sometimes, strychnine is used as a cutting agent in cocaine products. Some topic intoxication is described, too. Various analyses have been developed for quantification such as GC/MS and HPLC.

This case is unusual. It shows a relatively low rate in comparison with the results given in the literature. Histological examination and toxicological findings have permitted the authors to conclude this was a strychnine poisoning. Circumstances of strychnine-related death must be studied because of the rarity of cases. Because of the prohibition in 1999, people cannot get strychnine-containing products. Most often, the products were acquired a few decades before. Also, it seems that strychnine is relatively stable and is active at least ten years or more. In this case, police authorities have concluded it was a suicide, even if there is no psychiatric history and the container of the alkaloid has not been found.

Forensic Pathology, Strychnine, Poisoning