



Pathology Biology Section – 2007

G100 Bidding for Poison: The New Availability of Poisons and How to Use Them

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After attending this presentation, attendees will have an awareness of the facilitative role of the Internet in obtaining and using deadly poisons and the impact this will have on forensic investigators, pathologists, toxicologists, and computer criminologists.

This presentation will impact the entire forensic community by highlighting the ease of access to deadly poisons and guidelines for lethal use on the Internet. In cases of an apparently negative autopsy and/or vague allegations of poisoning by family, the threshold of suspicion has been raised by almost universal access through the Internet. Strychnine, the poison inadvertently obtained for this study, should also be considered in unexpected death in athletes.

An online bid was placed on a collection of antique pharmaceutical bottles, some of which were known to have originally contained strychnine sulfate, and which were purchased for an extremely reasonable sum.

The bottles arrived by UPS Ground, left on the doorstep. While this seemed unusual at the time, the seller was clearly paying homage to the prohibition of sending toxins through the USPS. There were several bottles of strychnine sulfate, most of which unexpectedly contained the pure substance, a fact verified by the Toxicology office associated with the Office. The seller had no knowledge of the author's occupation or intent for the purchase. There was no communicated warning.

Strychnine has a long and colorful history, becoming available in the early 19th century as a "tonic" for people and a poison for pests (and, arguably, for people). It binds at stimulatory receptors in the central nervous system as well as the inhibitory receptors, resulting in a massive over-transmission of signals. Although caution has always been recommended with its use, the therapeutic applications were myriad and included impotence, alcoholism, constipation and prolapsed uterus. It may have had a limited clinical role in the treatment of surgical shock and congestive heart failure. It is to this day on the list of banned substances for athletes, having been implicated in the win of the 1904 marathon (along with raw egg and brandy, which carry their own risks). Eventually, of course, it was recognized that the risk far exceeded the therapeutic benefit and its use was abandoned. It is currently available to athletes as the herbal *nux vomica*.

It is hardly a perfect poison for homicide because of its bitter taste and short delay in causing respiratory muscle paralysis. Acute poisoning may be treated symptomatically. It is, however, one of the most potent poisons known and may be administered through multiple routes, including dermal. The horrific terminal phase of convulsions may be attractive to those with homicidal intent.

Strychnine is tightly regulated but widely available as a rodenticide. The latter would be particularly unpalatable in the volume required for homicidal intent. The safety recommendations for underground rodenticide use are comparable to biosafety standards for autopsy.

In his classic and arguably still relevant chapter on homicidal poisoning, Adelson cites both access and knowledge of use as prerequisites for the poisoner. Both are within reach of those accomplished in the use of the Internet.

A disturbing study was conducted by the California Poison Control System (Look what I found! Poison hunting on eBay, *Clin Toxicol* (Phila). 2005;43(5):375-9). Over a 10-month period, 125 individual products too dangerous for commercial use were identified on online auctions; 24 were "supertoxic," including strychnine. Even a cursory search identifies guides to poisoning, including books in the popular press, some intended as a reference for crime novelists.

All medical examiners have undoubtedly had cases that were frustratingly negative for a cause of death. In addition, almost all have likely had cases where relatives alleged poisoning, although no access or specific substance was implicated.

Medical examiners, previously protected by the obstacle of access to deadly poisons, need to lower their indices of suspicion for cases of poisoning. Courtesy of the Internet, access and knowledge of use are widely available. Not only must appropriate toxicological analysis be considered and performed but also law enforcement investigators with computer crime experience must be involved in a timely fashion.

Poison, Access, Internet