G99 Sequential SIDS or Double Homicide? Challenges of Delayed Investigation of Potential "Subtle" Child Homicides

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After attending this presentation, attendees will understand the challenges of delayed investigation in sequential infant deaths.

This presentation will impact the forensic community and/or humanity by demonstrating successful coordination of investigation of sequential childhood deaths. Experience illustrates a truism that needs to be remembered in all death investigation; namely, that all autopsy, biochemical and toxicologic data must be considered in the context of a coordinated investigation.

A stepfather placed his five-month old white female child on a living room love seat for a nap at 9:00 a.m.. According to police records, the stepfather went to sleep across the room on a couch. He awoke a few hours later to find the infant unresponsive. The infant was transported to the regional hospital where she was pulseless and apneic with a rectal temperature of 93.0° F. The initial police investigative report made no mention of syringes or insulin at the scene of death. Little information regarding the stepfather's medical history or background was obtained at that time.

At autopsy, the infant was normally developed and well nourished, with a length and weight appropriate for age. No contusions, abrasions, scars, or other signs of old or recent trauma were noted. Evidence of medical intervention included an intraosseous catheter in the right tibia, a single needle puncture wound in the left antecubital fossa, three needle puncture wounds in the right antecubital fossa, and a single needle puncture wound on the anterior right lower leg. No additional puncture wounds were seen. Postmortem x-rays revealed no acute or old skeletal lesions. There were no petechial hemorrhages in any of the internal thoracic organs, and no congenital organ anomalies were identified. Abundant hemosiderin-laden pulmonary macrophages were detected. Additional postmortem microscopic, microbiologic, and toxicologic studies were unrevealing. Vitreous glucose levels were not obtained due to insufficient sample quantity. The cause of death was classified as sudden infant death syndrome (SIDS).

Two years after the first child's death, the couple had moved to a different location, in a different police jurisdiction. A two-month-old male sibling was discovered by the father not breathing. Emergency medical personnel arrived to find the child unresponsive and pulseless on the sofa, with the father, again the sole caregiver, pointing toward the child without attempting resuscitation. The local hospital documented a rectal temperature of 92.6° F approximately one-hour and ten minutes after the father claimed the child was last known to be alive. Autopsy revealed a developmentally normal child, with no injuries. Gross and microscopic examination did not reveal evidence of natural disease, although abundant hemosiderin-laden macrophages were detected in the lungs. Resuscitative attempts had been aggressive and puncture marks were in the bilateral femoral areas; however, no other sites suspicious for injection were noted at autopsy. Postmortem microbiology and metabolic screening were noncontributory. Toxicology for standard drugs of abuse, salicylate and acetaminophen was negative. Vitreous fluid was not obtained. Because of additional investigative information, a postmortem blood test for insulin and C-peptide was done. Although the ratio of insulin to C-peptide was suspicious for exogenous insulin injection, the relative postmortem stability of these compounds is not known.

After the second case was reported to the medical examiner office, a coordinated investigation into both of these cases was initiated, with reevaluation of the first death. Following a comprehensive investigation, utilizing both correlative interpretations and essential interagency cooperation, the cause and manner of death in the initial case was changed to undetermined, while the second case was similarly left as undetermined. These cases illustrate several points to be considered in sequential child death investigations. First, multijurisdictional and multiagency coordination was crucial because the family moved into another police jurisdiction before the second death. Secondly, no suspicious circumstances came to light during initial investigation of the first child death. In retrospect, some red flags were evident and should have been detected with current investigative protocols. Third, interpretation and differential diagnostic implications of hemosiderin-laden pulmonary macrophages in infants will be briefly described. Finally, the difficulty of interpretation of postmortem insulin and C-peptide levels will be described. Limited experimental data obtained during attempted validation of this postmortem biochemical test will be presented.

SIDS, Insulin, Sequential Deaths