



D9 Investigation Techniques of a Child Death Involving a Dental Procedure

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After attending this presentation, attendees will recognize the importance of thorough scene investigations and continued utilization of medicolegal death investigation techniques in unusual or complicated medicolegal death investigations.

This presentation will impact the forensic science community by demonstrating the value of continued medicolegal investigation in supporting cause and manner of death.

Cases of child deaths as a result of routine dental procedures are extremely rare and require special investigative considerations. This is an unusual case of a previously healthy 5-year-old boy who went to the dentist for a routine dental procedure. The child was administered a dose of the sedative chloral hydrate. The child experienced respiratory distress during the procedure and was transported to a local hospital where the child died in the emergency room. The subsequent investigation revealed toxic levels of trichloroethanol, the metabolized drug chloral hydrate.

At the time the death report was received, the child had been pronounced deceased in the emergency department and initial information received was from an emergency room physician. Very little information was initially received, other than the child had been at a local dentist office for a routine procedure and had experienced respiratory distress and subsequent cardiac arrest. No known cause for these mechanisms of death existed as the child was reported to be healthy prior to this dental visit.

A scene investigation was initiated with local law enforcement and the local medicolegal death investigator. The dental office was thoroughly documented with photography and copies of medical records obtained from the medical file on-site. Dental equipment was thoroughly inspected for proper working order and initial interviews were conducted with office staff.

Interviews conducted with office staff provided a sequence of events that was later corroborated with testimony from the deceased child's mother. Additionally, the timetable provided by office staff was later corroborated with emergency medical service dispatch times and information from first responders.

An interview conducted with the child's mother revealed her son was previously healthy and had no known medical conditions. The child's most recent medical records were obtained as well as an accounting of the child's most recent physical activity.

Following the initial scene investigation, an autopsy was performed on the child. No apparent cause of death could be established from the gross examination. Further toxicology studies showed significantly high levels of trichloroethanol (the metabolite of chloral hydrate) indicating an overdose of chloral hydrate.

A follow up interview by the medicolegal death investigator was conducted jointly with the dentist and a law enforcement detective. During this interview, several questions were answered about the procedure for administering the chloral hydrate and the measuring device used.

Information was obtained about the chloral hydrate manufacturer and distributor to ensure there was no error in the concentration of chloral hydrate obtained, and therefore administered, by the dental office. Finally, as a result of a thorough scene investigation, the bottle of chloral hydrate collected as evidence was sent to the FBI Toxicology Laboratory for analysis and quantification of chloral hydrate concentration.

This investigation spanned over a year and required continuous involvement from the forensic pathologist, medicolegal death investigator, and law enforcement. Through the information gathered with a thorough initial scene investigation and continued extensive follow up and evaluation of the evidence in the case, many subtle and important questions were answered. The ability to take into consideration the special circumstances of a child death, especially one that occurs as a result of a routine dental procedure, allowed a thorough investigation to be conducted. This thorough investigation will hopefully provide insight into future incidences in which a seemingly benign procedure turns deadly.

Child Death, Chloral Hydrate, Dental Procedure