G48 Pathology/Odontology: The Team Approach to a Forensic Autopsy

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After attending this presenation the attendees will undertand the "dual role" the pathologist and odontologist have in determining the cause of death and the development of a positive identification

The presentation will impact the forensic community by increasing the awareness of the medical legal system and law enforcement agencies regarding how the coordination of these two forensic sciences can support the investigation.

A forensic pathologist performs autopsies to determine the cause and manner of death in situations falling under the jurisdiction of the Medical Examiner/Coroner Office. After the forensic autopsy is completed, the forensic odontologist examines the dental structures, and through a comparison analysis between the antemortem dental and the postmortem dental records, can render a "rapid onset" positive identification. When working together, both forensic professionals, can

provide concordance, to the issuing of a prompt death certificate for the next of kin, and can also be called upon to be an expert witness in a court of law.

This presentation will increase the awareness of the forensic community and law enforcement agencies, in the attempt to show, how both fields can work together in the forensic autopsy. The focus of this case presentation will highlight the forensic investigation of a high profile dual homicide case illustrating the forensic team approach. The difficulty of the case stems from the young age of the two related victims, the cause and manner of death, the history behind that investigation, and the final court decision. The presentation will include how forensic anthropologists recovered the buried remains, how forensic pathologists determined the cause and manner of death, and how forensic odontologists determined the chronological dental age and the final rendering of a positive identification.

Skeletal remains were discovered in a shallow grave in a wooded area in Missouri. Forensic Investigators first surveyed and photographed the scene. A forensic anthropologist was then called to assist with the excavation. Two juvenile skeletal remains along with clothing fragments and projectiles were placed into evidence. The forensic pathologist determined that both children were shot in the back of the head, from an indeterminate range, which was the cause of death. The skeletal remains were further examined by the forensic anthropologist, who determined estimates of height, weight, and race. After procuring antemortem dental records, a positive identification was made by the forensic odontologist. In addition, bone samples were collected and stored for DNA analysis.

Discussion of the dental (oral) autopsy will reveal how the actual dental x-ray comparisons were made for a positive identification. Specific reference will be made to the use of special dental technology, such as digital dental radiographs and the WINID dental charting software program. These same dental protocols can also be developed in the SOP's and applied by a medical examiner/coroner's office, for future multiple deaths or a mass fatality incident.

Although this was a high profile homicide case, the routine utilization of a forensic odontologist can provide additional evidentiary value to many cases involving skeletal, decomposed, or fragmented remains. Forensic dentistry can provide support evidence for positive identification, when other modalities, such as fingerprints or time sensitive DNA analysis are not utilized.

In conclusion, the ability to blend the two forensic sciences, pathology and odontology, during a forensic autopsy, can be invaluable to a medical examiner/coroner office in the investigation process, criminal trial and for final closure for the victim's families.

Pathology, Odontology, Positive Identification

 ** Presenting Author*