G41 Identification of a Child Using Comparative Overlays of Primary and Permanent Dentition

Grace Chung, DDS, Clark County Office of Coroner/Medical Examiner, 1704 Pinto Lane, Las Vegas, NV 89106*

The goal of this presentation is to highlight the challenges facing forensic odontologists when making a dental identification of children and young adults. In the events surrounding this case, the Antemortem (AM) radiographs and Postmortem (PM) radiographs displayed very little similarity in that one had mostly primary dentition and the other permanent dentition. This presentation will provide the odontology community with the following objectives: (1) methods of overlaying images to compare developing permanent teeth to erupted teeth radiographically; (2) understanding the importance of collaboration with a team of dentists when a positive identification is not obvious; (3) using age estimation methods as well as comparative analysis to collect several areas of concordance to have a positive identification; and, (4) the protocol for child abuse management within one's community.

This presentation will impact the forensic science community by informing attendees that dental identifications can be made using somewhat non-traditional methods that are quick and effective. This will also bring community awareness regarding the potential shortfalls of an agency such as Child Protective Services and/or school districts to properly report and handle child abuse cases.

Among the various methods used to identify an unknown decedent, identification using dental data is typically quick and definitive; however, in rare instances, traditional methods for dental identification (comparing missing/existing teeth and dental restorations) cannot be utilized easily due to AM radiographs preceding PM radiographs by a long interval of time when a child is undergoing physiological changes of growth.

On April 25, 2017, two men discovered the skeletal remains of an adolescent child in an east valley desert lot in Las Vegas, NV.[1] The body was confirmed by the Clark County Coroner's Office as a young adult, and the coroner called upon the team's forensic odontology section to begin dental charting right away. At the same time, the investigative team acquired the dental records of a boy who went missing from his home in late January 2017. The family and medical examiners were eager to see if this was a match — as always, unknown children's cases are expedited and processed with urgency. The AM radiographs revealed a young child in mixed dentition with only permanent first molars and lower four incisors erupted with all roots still developing. The PM radiographs of the adolescent decedent were all of permanent dentition, and neither set of radiographs nor the clinical evaluation of the remains revealed any evidence of restorations.

This posed a challenge for the odontologists, and initially it was believed that a conclusive finding could not be made; however, upon further investigation and collaboration with one another, they were able to use the Mideo Systems software overlay system to compare several structures of the permanent dentition on the AM radiographs. Also, they overlaid the developing permanent teeth (still in the follicles during development) in the AM radiographs onto the PM radiographs and were able to find consistent anatomical structures in the overlays. By having several areas of concordance, the odontology team was able to make a positive ID quickly. Sadly, the findings of the rest of the investigation were not as celebratory.

It was discovered that this 13-year-old boy's killer was none other than his father. Due to the ability to make a quick ID, law enforcement was able to make the arrest in a timely fashion and bring the suspect to justice. As the story unfolded, it was discovered that this boy was no stranger to Child Protective Services, as he was taken and given back several times in his young life. This case is not only a story of identification using somewhat non-traditional methods, but it is a case of neglect from his family, his school system, and the state agency.

Reference(s):

1. Karen Castro. Decomposed body may be 13-year old Aaron Jones. *Las Vegas Now*. April 26, 2017.

Abuse, Child, Primary