



D46 Atypical Postmortem Dental Identification

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After attending this presentation, attendees will possess a greater understanding of exceptional, non-traditional methods of postmortem dental identification when antemortem dental records do not exist or are otherwise non-retrievable.

This presentation will impact the forensic science community by emphasizing the areas of medicolegal death investigation, forensic pathology, forensic anthropology, and forensic consulting. In each of three cases discussed, human identity was confirmed within medical/legal certainty, utilizing an alliance of forensic dental autopsy and antemortem medical records or differential non-radiographic maxillofacial oral anatomy. With each case example, a greater knowledge of the scope and advantage of contemporary forensic odontology as an augment to traditional death and identity investigation will be gained.

Reasons that a forensic dental comparison is an ideal instrument in death investigation include the longevity and durability of the dental and oral anatomy, even in scenarios of extreme heat, trauma, decomposition, or a combination of all of these factors. Postmortem identification based on dental record comparison is universally recognized and consistently accurate. The reality however, that despite thorough investigation, antemortem dental records are not always recovered is addressed in this presentation. The alternative investigative methods employed that resulted in a positive dental identification, without antemortem dental records will be detailed.

The first case involved a white male seen in a parking lot pacing around a vehicle. Moments later, witnesses observed the vehicle engulfed in flames with the male sitting in the passenger seat. Emergency personnel responded and confirmed the death without intervention due to the thermal injuries. Homicide detectives were summoned to the scene and initiated an investigation. Autopsy confirmed the cause of death as inhalation of products of combustion and the manner of death as suicide. Antemortem dental records of the decedent were not recovered; however, medical radiographs of the head and neck were available. A forensic odontologist was summoned and antemortem digital radiographs, a frontal and lateral skull series highlighting a medical implant on the cervical vertebra, were offered for analysis. The dentition was visible on both radiographs and, because of the radiographic orientation, the lateral film showed the lower teeth clearer and with more detail. Tooth numbers 30 and 31 were restored with significant and unique dental restorations. Postmortem dental radiographs were taken and a positive identification was rendered based on the comparison of these dental restorations.

The second case involved a Hispanic male transient. 911 was called after a witness found the decedent floating in a creek. Paramedics arrived, recovered the body, and confirmed death. Autopsy determined the cause of death as atherosclerotic coronary artery disease with contributing factors of drowning and chronic alcohol abuse; the manner of death was accidental. The investigator summoned a forensic odontologist to complete a dental identification, yet no antemortem dental records were recovered. However, very recent frontal and lateral CT scans were collected and given to the odontologist for analysis. Postmortem dental radiographs were taken and a positive dental identification was rendered after precise antemortem image improvement to allow for a strict tooth-by-tooth comparison of the decedent's restored teeth.

The third case involved a motor vehicle collision resulting in two fatalities, a male youth and an elderly female. The bodies of both decedents were charred beyond recognition and identification by dental record comparison was ordered by the medical examiner for both victims. Antemortem dental records for the female victim were quickly obtained and her identification was made without difficulty. The investigator learned that the youth was undergoing orthodontic treatment in Tijuana, Mexico, and it was assumed adequate dental records would be readily available for comparison; however, this assumption was wrong. No pre-orthodontic dental radiographs of any kind had been created, and only study models of the decedent's teeth, prior to orthodontic appliance placement, were available. Even with the extent of external charring, the oral cavity, dental, and palatal anatomy of the decedent remained unharmed. Dental impressions were collected on the decedent and models created from these impressions for comparison with the antemortem models. Although the tooth positions were now inconsistent due to orthodontic repositioning, the distinctive pattern of the palatal rugae had numerous consistencies and there were no unexplainable inconsistencies upon direct comparison. A positive identification was rendered based upon this comparison.

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