



G7 When There Are No Typical Dental Remains, “Thinking Outside the Bag” Is Required to Make a Positive Dental Identification

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Learning Overview: After attending this presentation, attendees will recognize and understand the need for a thorough examination of the remains in order to locate all dental remains that could possibly be useful in making a positive dental identification.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by explaining why sometimes pertinent dental remains may not seem to be useful compared to the typical dental remains used in making dental identifications and why it is important to be thorough in the search for all possible exemplars.

Dental identifications are all unique puzzles that we endeavor to solve scientifically. Some of the puzzles are incredibly basic and easy to solve. Others seem to be overwhelming or nearly impossible to solve upon initial examination of the remains, either due to the condition of the remains or a seeming lack of definitive exemplars. These are the cases that are the most challenging, requiring evaluation of the case from a unique perspective based on the information that is available. This presentation will use an actual case study to show how the importance of locating and examining all of the available dental structures, the charting and cataloging of these remains, the importance of using sound logic, and using basic dental anatomy learned long ago in dental school can help to yield a scientific positive dental identification by comparison to antemortem records.

The fire in this case was intense, burning long and hard, resulting in severe damage to the dental structures and the rest of the body. The clinical crowns of many of the teeth were calcined to the point where they were essentially ashes and crumbled upon contact with any dental instrument. The mandible and maxilla were burned to such an extent that much of the cortical bone was gone, leaving a bas relief model of the shape of the roots and trabecular bone with no real clinical crown structure present to be evaluated. Many individual roots were present in “loose form,” meaning that they were mixed in with the remains in the body bag and had to be “sifted through” in order to be found, though some roots were still present in the mandibular and maxillary structures, again as roots with no crowns present. This identification was accomplished using slow and careful examination of root structure, unique root morphology, and ultimately enhanced by the presence of a “unique surprise perfect exemplar,” missed among the charred fragments in the early stages of evaluating the dental structures present.

Examination, Thoroughness, Logic