



Physical Anthropology Section – 2008

H8 Practical Consideration of the *Daubert* Guidelines on Methods of Identification in the Medical Examiner Setting

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The educational objective of this presentation is to consider the method- ological dichotomy between satisfaction of the federal law regarding forensic testimony and the practical constraints of daily operation of a medical examiner's office.

This presentation will impact the forensic community by highlighting the dichotomy between the *Daubert* rules and practical constraints associated with identification in the medical examiner's setting.

Scientific identification is of primary importance in forensic death investigations. Medical examiner personnel, including anthropologists, are obligated to pursue positive scientific identification under certain circum- stances including homicides, disfigurement, commingling and decompo- sition. The definition of positive identification varies based on the circumstances of death, and the distinction between what is required under different circumstances is significant in the application of current techniques of identification and the development of future ones. A quantified estimate of identity is often required in cases pending prosecution, whereas presumptive identification is acceptable in non-prosecutory cases. The *Daubert* ruling of 1993 is the most influential of the federal laws that pertain to this issue (Steadman et al. 2006). This particular court case has resulted in an increase in the scientific and statistical rigor required of methods of identification of the deceased. Medical examiner personnel must reconcile the practical constraints of the medical examiner context with the require- ments of the law. The end results are concomitant conflicting interests in: (1) establishing a quantified estimate of identity, and (2) expediting the process of identification in the face of limited antemortem records and resources as well as familial demands.

This presentation details a case in which the antemortem records available for positive identification were limited to MRI imagery of the head and other standard sources of antemortem data including fingerprints, dental records, and skeletal x-rays were not available. The decedent was found dead in his apartment following an altercation with other individuals. The decedent's brother was on the scene at the time of the incident and survived. The parents of the decedent viewed a photo of the decedent and were able to visually identify him. Given the traumatic nature of the event and the interests of the family, identification by a method more expeditious than DNA comparison was essential.

Positive identification of the decedent was achieved by consideration of several qualitative features visible on the MRI images rather than the appli- cation of a quantified method of antemortem and postmortem radiograph comparison. Visible on the MRI imagery was the decedent's frontal sinus outline, his dentition, and a soft-tissue defect visible at autopsy. The frontal sinus morphology, as seen on the MRI imagery, was very complex and strongly resembled postmortem images in number of cells, bilateral dimension, bilateral asymmetry, superiority of side, distribution of partial bony septations, number of partial bony septations, distribution of complete bony cells, and number of complete bony cells (Reichs and Dorion 1992). The incomplete development of the third molars in both the postmortem and antemortem images indicated that the decedent was in the appropriate age category relative to the antemortem records. In addition, a sebaceous cyst noted at autopsy was clearly visible and located in the same position on the antemortem imagery. Taken together, these two characteristics were deemed appropriate for scientific identification following a conference between the anthropologists and the medical examiner presiding over the case.

This case represents a situation in which limited antemortem records and familial demands required utilizing a method to expedite identification in lieu of a quantified method. Although the method applied was not quan- tified, subjectivity was minimized through accumulative findings. Active research in the development of identification methods that meet the demands of the *Daubert* ruling and the constraints of the medical examiner's setting is ongoing by the Anthropology Division at the Harris County Medical Examiner's Office.

Forensic Identification, Medical Examiner, *Daubert* vs. *Merrill-Dow*