F2   Video Superimposition: A Method for Preliminary Identification

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Attendees will learn that video superimposition is a viable technique to preliminarily identify human remains through photographs exhibiting anterior dentition.

This presentation will impact the forensic community and/or humanity by demonstrating how simplistic techniques, while sometime overlooked, can be viable options for the forensic scientist.

The goal of this presentation is to develop additional data sets and provide further statistics which subsequently strengthen scientific basis in the identification of human remains through video superimposition of photographs exhibiting some anterior dentition, and the dentition of recovered human remains.

The comparison of photographic media is widely accepted and has shown itself to be fundamental to the field of forensic odontology. However, published literature has established the need for alternate dental comparison techniques. Furthermore, most current research is focused on the area of bite mark identification. A previous research project by one of the authors, which was presented at the AAFS 2002 Annual Meeting, has provided initial results that validate direct visualization and video superim- position comparisons as techniques with merit for narrowing potential matches.

This initial research project used 100 photos of unknown male/female subjects compared to both a known male and female subject. The new data set is based on 100 male/female unknown photographed subjects compared to the female skull also used in the initial study. This data set focuses on the use of video superimposition of anterior dentition, specifically noting colossal patterns and morphology, but also including size, wear/trauma/disease and/or other identifiable dental characteristics.

This methodology is readily adapted to training and education, and can be easily digitized. It has the potential to provide a streamlined method of human identification through forensic odontology, as in the instances of mass disasters (major air catastrophes, acts of terrorism), as well as singular human identification. This type of identification technique has the potential to drastically reduce man-hours in preliminary elimination of subjects. Furthermore it can contribute to larger numbers of positive identifiable records with reduced false inclusions and/or results that are indeterminate. While additional research is needed to further refine these methods, an added set of data in the video superimposition technique can provide a pre- liminary match rate envisioned to concur with that of the initial study. Formal participant results will be available and submitted no later than September 1, 2004.

Forensic Odontology, Video Superimposition, Occlusal Pattern