



F10 Three Cases of Single Radiograph Victim Identification

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The forensic dentist must develop the ability to think past the initial disappointments in victim identification search patterns and utilize as much investigative information in creating secondary searches.

This paper will present three cases of identification of human remains from the World Trade Center Disaster. The enormous numbers

of victims from this tragedy has re-defined the term "Mass Disaster." The WinID search software was originally developed to accommodate a two to three hundred fatality incident. This program has been updated numerous times since "9-11" and has performed admirably. It is clear that the forensic dentist must be accomplished in computer search techniques as well as conventional intuitive thought processes. Patience in the tedious task of selecting and formulating search criteria was the principle factor responsible for the success achieved below. Each of the cases presented was identified by a comparison of postmortem radiographs and clinical examinations with the antemortem dental charts and radiographs obtained from the respective family dentists. In each case, the successful identification of these victims was elicited from the information contained in a single radiograph.

Case Number 1 presented the recovery of a victim with nearly a full dentition. The initial search on WinID produced well over 100 possible matches, which was due to the inordinately large number of victims of this tragedy who presented with either all-virgin teeth or with minimal restorations. The dental remains exhibited one tooth that had an amalgam restoration while the remainder of the teeth were un-restored. Identification based on the anatomy of the restoration or any of the usual parameters were unsuccessful. It was noted during the postmortem examination that all the teeth showed the classic "pink tooth" look with the exception of teeth numbers eight and nine. Radiographically these teeth showed marked root resorption. It was determined that the decedent had suffered a trauma to several teeth accompanied by the resultant resorption of root structure. This single defining factor offered the unique characteristic needed for identification. Subsequent filtering of the WinID database was successful.

Case Number 2 offered a different obstacle to successful WinID searching. While several teeth were missing or restored, the closest WinID possibilities were not at all feasible. After the initial search, the investigators discussed several different possible search options. During the dental postmortem examination of the victim, it was noted that one of the teeth that was missing seemed to have been either extracted recently or avulsed due to the blunt trauma associated with the tragedy. It was decided to "replace" the missing tooth for search purposes. This decision resulted in the retrieval of one radiograph containing a recent extraction, a chipped tooth, and a restoration thus affording a positive identification.

Case Number 3 dealt with the fragmented remains of the left mandibular arch. The two premolar teeth were un-restored, the first molar had a metallic restoration, the second molar had a nearly complete coronal fracture and the third molar was missing antemortem. The initial WinID search offered ninety-one possible matches. Tedious comparisons of anteand postmortem radiographs successfully elicited an identification of the decedent based solely on the single X-Ray film of the area involved. The unique shape of the pulpal amalgam and the identical root morphology established the resultant identification.

The identification of these three victims was accomplished by utilizing the search parameter filtering characteristics of the WinID software program and by the creativity of the investigators to rethink the parameters of search to fit the individual case.

Single X-Ray Identification, Forensic Odontology, Victim Identification