G9 The Head in Cement and the Medical Examiner

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The goal of this presentation is to illustrate how multiple forensic disciplines can work in conjunction with each other to solve a case of unidentified remains.

This presentation will impact the forensic science community by re-emphasizing the fact that all forensic departments within a single medical examiner's office can, and must, work together to bring about favorable case results.

This case study involves a skull, found partially encased in cement, on the side of a major highway by an unwitting bicyclist. The mound of cement was brought to the Office of the Suffolk County Medical Examiner (OSCME), NY, where a forensic anthropologist carefully extricated the skull from the concrete. The pathologist and the anthropologist observed evidence of blunt force trauma to the head, as well as fractures of the maxilla, mandible, and facial bones.

After removing the skull from the cement mound, a facial impression was visible on the internal surfaces of the cement mound. Another forensic anthropologist described this phenomenon as a form of a Death Mask. This artifact is created when the fatty acids of the skin form a barrier between the concrete and the head, which then leaves a facial impression when the tissues decompose. Hair was also found imbedded in the concrete and was removed for analysis.

A model of the facial impression was made by pouring a silicone material (Dragon Skin™) into the concrete mound, leaving it to set overnight, then carefully removing the cast the next day.

A forensic odontologist performed a dental examination, and radiographs were taken, but no antemortem dental records were available through the police department or the National Missing and Unidentified Persons System (NAMUS). A forensic artist examined the skull, and created a two-dimensional facial reconstruction of the individual in question. The profile created by the forensic anthropologist described a young-to-middle-aged male, with mixed racial characteristics of European (White) and Asian (including Hispanic) traits. The analysis of the hair samples by the forensic scientist revealed light brown, brown, and dark brown fragments exhibiting Caucasian (European) racial characteristics.

A tooth was used to obtain a DNA profile. The DNA profile was consistent with having originated from a male. The profile was entered into the Combined DNA Index System (CODIS). The profile matched another OSCME case from 2009, in which a torso and some fragments of extremities were found in a landfill. Those body parts were previously identified using DNA collected from the missing individual's toothbrush.

The positive ID through DNA and CODIS was of a man of Pakistani descent. His age at the time of his disappearance was 36 years of age. This case is an ongoing homicide investigation.

This case study will illustrate how multiple forensic disciplines, including pathology, anthropology, trace evidence, odontology, artistry, and DNA, all coordinated their efforts to solve a case of unidentified remains.

Identification, Forensic Collaboration, Unidentified Remains

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