H3 Results of Forensic Anthropological Examination in Daegu Subway Disaster (2003, Korea)

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The goal of this presentation is to demonstrate the results of forensic anthropological examination in the Daegu subway disaster in Korea (2003).

This presentation will impact the forensic community and/or humanity by presenting the methodologies and results used to reconstruct the biological profiles and separate the commingled bone fragments of the victims by forensic anthropologist in the Daegu subway disaster in Korea (2003).

Disaster victim identification normally consists of multidisciplinary procedures: recovery of victims, mortuary center operations, collection of ante-mortem data and identification methods. During the 1990's, recovery of victims of mass disaster in Korea were usually performed by nonmedical personnel such as firefighters, soldiers, and police-officers. But, the Daegu subway disaster allowed for [challenged] a meticulous and careful investigative approach in the recovery and reconstruction of the victims because carbonized victims were left *in situ*, piled one over another within narrow aisles and seats inside the train.

After mapping the disaster area, two recovery teams composed of two medical examiners and one forensic anthropologist began the recovery of corpses from the train. At first, the surface debris was cleared from inside the trains. The area was searched for fragmented body part and scattered and fragmentary remains were recovered. During the recovery, attempts were made to locate all parts of one body and associate them. Commingled bone fragments were separated by anthropological examination considering typical bony landmarks such as external occipital protuberance, greater sciatic notch, pre-auricular groove, linea aspera, and so forth. Body parts without bony marks were separated based on surface color of burnt bones - gray, yellowish, white, and black, and anatomy-humerus, tibia, metacarpal. The separated commingled bone fragments were packed in zipper bags and tagged with the area number and comments on the contents, e.g., male's upper extremities, female's hip bone. After the recovery team determined that one victim's fragmented body parts and associated bones were present, the remains moved from the original location to a steeltray for autopsy, dental investigation, and DNA-sampling.

After the results of DNA recovered from burnt fleshy were obtained, the recovery team began to reconstruct individuals. Cadavers from the same area were moved to the reconstruction room and commingled bone fragments were rearranged according to the DNA-results of associated body parts. Fragmented body parts and carbonized bones of victims were individually laid out in anatomical position. During the reconstruction of victims, the surfaces of body parts and bony fragments were brushed and the debris from each victim's body was collected and stored in another zipper bag. After the careful investigation, less than 30 zipper bags containing bone fragments remained unassociated with body parts. These were delivered to the committee of the bereaved and cremated in a joint funeral.

This presentation demonstrates the utility of forensic anthropological investigation to identify the disaster victim whose body is fragmented and burned. In the future, guidelines for recovery of bodies in mass disasters should be made on the basis of these experiences in Korea.

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