H65 Odd Man Out: Separation and Identification of Terrorist Remains in Suicidal Bombings

William C. Rodriguez III, PhD, Office of the Armed Forces Medical Examiner, 16465 Old Frederick Road, Building 102, Rockville, MD 20850*

After attending this presentation, attendees will be familiar with basic methods and techniques useful in separating commingled remains of terrorist in suicidal bombings. In addition the attendees will be provided information concerning injuries sustained by suicidal bombers in relationship to the type of explosive device detonated.

This presentation will impact the forensic community and/or humanity by assisting the forensic community in conducting investigations dealing with terrorist bombings and helping to determine remains which may be those of the bomber.

One of the biggest threats facing the world at large today is terrorism. In many countries such as Iraq, Afghanistan, Pakistan, and Israel there are constant attacks by terrorists on both military and local civilians. The attacks commonly employed are those committed by suicidal bombers, who strap themselves with explosives and detonate them in strategic areas of commerce or other areas where crowds coalesce. Detonation of these explosive devices has caused tremendous causalities in addition to destruction of property. The greatest perpetrators of these suicidal bombings are fanatical Islamic fundamentalists who believe that by killing themselves, they will become martyrs and will be richly rewarded in heaven.

Forensic examination of evidence recovered after a bombing includes the identification of fatalities including the bomber, and associated explosive injuries. In most cases there will be commingling of both the remains of the bomber as well as the innocent personnel. Separation of the bombers remains from those who were killed is important for two reasons. One it is important to identify the remains of the innocent by-standers and return them to their families to help provide some degree of closure. Secondly it is important to identify the remains of the bomber as they provide important clues as to the identity of the bomber, and the type of explosive device utilized.

In many bombing cases separation of the commingled remains requires forensic anthropological examination of the remains in order to determine the anatomical portions represented and the minimum number of individuals present. Once the minimum number of individuals is established the anthropologist can undertake developing a biological profile for each set of remains identified in reference to sex, age, and race. In addition to anthropological separation based on morphological characteristics, the anthropologist can collect tissues specimens for DNA analysis.

Anthropological separation of the bomber's remains can also be accomplished by identifying the personal characteristics of the bomber. Characteristics utilized in identifying middle-eastern bombers includes evidence of dark or olive skin tone, abundant body hair, dark head and body hair which is thick or coarse, presence of a beard, dry and worn feet (evidence of everyday sandal wear in a desert environment), absence of U.S. or European dental work, and the presence of embedded electrical components such as wires in various body portions. Although these traits are not necessarily exclusive they have been found to be extremely useful in separating those of Middle Eastern decent from Europeans. Age estimation can also be of use, as the great majority of suicide bombers encountered are between seventeen and thirty years of age.

Examination of injuries involving belt type explosive devices worn by the bombers leads one to expect to see separation of the body into two to four major portions (being the upper torso from above the lower rib cage in addition to one or both arms out to the elbows, and the inferior pelvic border which may be attached to one or both upper legs). The lower arms and lower legs tend to be separated from their respective torso area and may be also further separated from the hands at the wrist and feet at the ankle. Injuries involving larger explosives such as those carried in a large backpack or transported as a car bomb produce greater fragmentation of the body with upper limbs separated into the hands, the lower arms and wrist complex, the elbow complex, the upper arm and shoulder complex, the lower limbs separated into the feet, lower leg and ankle, middle femoral shaft, the left and right innominate and their respective proximal femur head and neck, the lumbar vertebrae column, the lower thoracic vertebral column and inferior rib cage, the upper thoracic vertebral column and upper rib cage, the cervical vertebrae column with a portion of the inferior base of the skull and mandible portions, and the upper cranium divided into four sections, the maxillary and temporal portions, the occipital bone, and the parietal portions.

The use of nuclear DNA extracted from soft tissues or bone can provide evidence of an unknown profile or "odd-man-out." Additional DNA studies, in particular mitochondrial profiling can be used to denote a possible suicide bomber based on sequence comparison to reported world databases indicating that an individual is likely of Middle–Eastern origin. Multiple case examples of suicide bombings will be presented, highlighting anthropological methods for sorting the human remains involved.

Anthropology, Bombs, Explosive Injuries

 ** Presenting Author*