

Suicide by Bomb, with Decapitation

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ABSTRACT

Suicide by explosion is rare outside of the context of terrorist activities. We present a case of a man with a history of explosives expertise who committed suicide by bomb/decapitation. The case serves to remind forensic pathologists of several important issues when presented with a case involving explosives, such as ensuring the safety of all those involved in the investigation and the importance of interagency cooperation. Potentially invaluable ancillary tests at autopsy include performing radiology, collecting trace evidence, retaining clothing, ensuring the positive identity of the decedent, and recognizing the importance of documenting injury types and patterns. *Acad Forensic Pathol.* 2016 6(1): 140-149

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INTRODUCTION

Within most jurisdictions, suicidal explosions are rarely encountered in the field of forensic pathology. Although a significant number of suicidal explosion deaths are localized to the head (1-7), many cases involve the trunk. As with other explosions, blast injuries can be classified as primary, secondary, tertiary, and quaternary types. We present the case of suicide via explosives.

CASE REPORT

In the fall of 2011, the badly injured body of a 65-year-old male was found on its back in the backyard of his home (**Image 1**). A suicide note was found in the home, which indicated that the decedent wanted to “take the quick way out” of life, saying that he

was depressed and in pain. Investigative information confirmed that the man was a military veteran with training in explosives. The victim’s neighbors and brother, who contacted police as they had not heard from him in some time, explained that the decedent was constantly using explosives. The neighbors had mentioned that four days prior, they had heard and felt the biggest explosion they had ever heard from his property, but had not contacted anyone since he was always blowing things up. Upon arrival at the scene, police were initially concerned about additional explosive devices, as the decedent had previously expressed antigovernment sentiment. This fear was heightened by the presence of a hand-held remote detonator device and another electrical device at the scene. As a result, the bomb squad was called and a robot was used to closely examine the remains and the scene prior to moving the body (**Image 2**). There were



Image 1: Scene photograph showing the victim in a collapsed lawn chair in the middle of the backyard of his rural residence, with notable absence of the head.

no more explosives found near the body, but unarmed explosives were found in the decedent's residence and disposed of at the scene.

Autopsy examination revealed a well-developed, well-nourished, male whose appearance was altered by severe injury. Radiographs revealed extensive skeletal trauma to the upper torso, with absence of head and neck structures as well as fractures about the knees. There was no radioopaque foreign material/shrapnel evident by radiographic exam. Explosive-type defects were noted on the upper aspects of the torso clothing, as well as on the knee portions of the pants. The head and neck were absent and there was extensive damage to the upper torso (**Image 3**). The anterior and posterior skin of the upper chest and shoulders demonstrated irregularly jagged borders with areas of soot and charring focally. The soft and bony tissues underlying the borders were markedly

damaged by presumed explosive injuries. There were rare abrasions and contusions of the chest and upper extremities. The lower extremities demonstrated rare abrasions and contusions as well as severe lacerations of the anteromedial knees with underlying fractures of the distal aspects of the femora (**Image 4**). Within the depths of the knee wounds there was soot and charring noted.

On internal exam, portions of the heart and lungs were evident within the chest cavity but were severely pulverized due to extensive blast-type injuries; the diaphragm was lacerated bilaterally and extensive pulverization-type injuries affected the liver as well (**Image 5**). The upper esophagus, aortic arch, trachea, and mainstem bronchi were absent. The descending thoracic aorta and lower esophagus demonstrated lacerations. The clavicles were not readily identified, while the sternum, both scapulae, and ribs 1 through



Image 2: Bomb squad robotic device used to perform initial body exam.



Image 3: Absence of head and neck, with injuries of shoulders/upper chest.



Image 4: Knee injuries.

10 bilaterally showed numerous fractures; the vertebral column was absent above the level of thoracic vertebral body 6 (**Image 6**). There was a laceration of the left flank, from which a portion of the small intestine protruded. Rare contusions of the small intestines, transverse colon, and of the mesentery were evident.

Although there was evidence of apparent charring focally on the clothing and skin, there was no visibly identifiable foreign material evident. Swabbings of the hands and injured tissue margins were collected and retained (**Image 7**). The clothing was retained as well (**Image 8**).

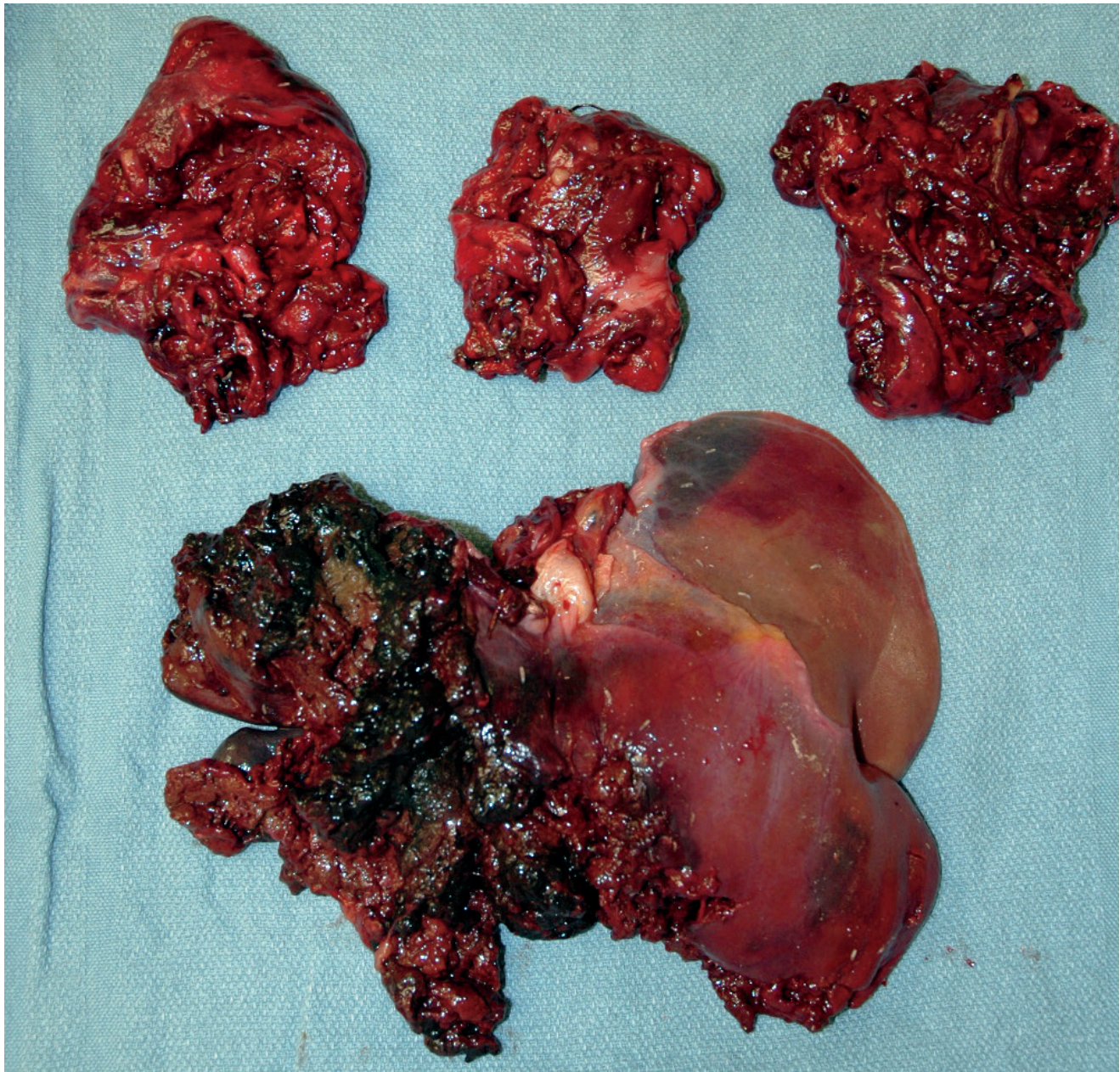


Image 5: Irregularly ragged, badly injured remnants of both lungs and the heart (upper central) were present within the chest, and the liver showed extensive injuries as well.

Because of the extent of injury, there was virtually no blood remaining in the body; therefore, blood toxicology testing could not be performed. A urine drug screen tested positive for opiates, acetaminophen, topiramate, norcyclobenzprine, and dihydrocodeine. The body was only tentatively identified at the time of autopsy, based on circumstance. Subsequent positive identification was made by fingerprint comparison. The cause of death was explosion/blast injuries from a bomb. The manner of death was suicide.

Reconstruction of the event suggested that the decedent sat in a lawn chair, placed the explosive device between his knees, and leaned forward, with his head close to the device. The decedent had apparently purposefully kept his hands/fingers away from the explosion, apparently knowing that visual identification would be impossible after the explosion, but finger-

print comparison would be possible. As the case was deemed an obvious suicide by the coroner and police investigators, no further testing was undertaken to determine the exact nature of the explosives used in this event. As such, despite the collection of trace evidence and clothing, no further examination was performed.

DISCUSSION

Suicidal explosions are rarely encountered in the United States, although in some places worldwide, suicidal terrorist bombings are encountered to some degree of regularity, and the nonterrorist variety may be more common in other nations. One larger study conducted by Rajs et al. evaluated all explosion-related deaths in Sweden during a six-year period from 1979 to 1984 (1). Of the 61 explosion victims, 25 (44%) were determined to be suicides. They were all

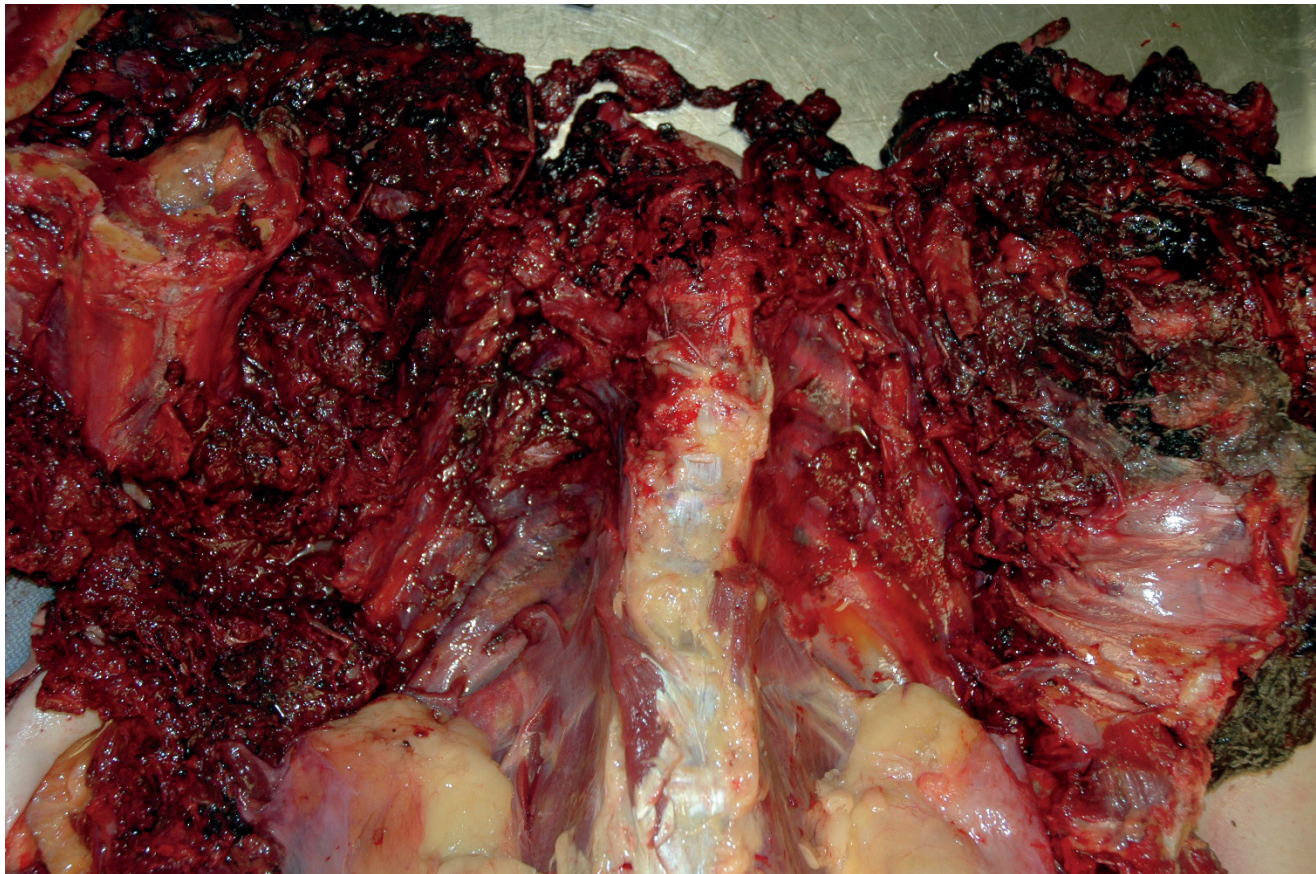


Image 6: The appearance of the upper torso after removal of the injured internal organs, showing extensive musculoskeletal trauma.

men, many of whom exhibited one or more suicidal risk factors, including somatic disease or handicap, mental disorder, history of drug and/or alcohol abuse, social or economic factors, or an expressed intent to commit suicide.

Many of the reported cases of suicide by explosives report destruction of the head; however, rarely do they result in complete decapitation. Shields et al. published two cases involving severe craniofacial injuries without decapitation (2). Tsokos et al. reported on four cases of suicide by explosives all involving severe head injuries but only one involving decapitation (3). Schyma et al. reported a case of an employee in a military scientific institute who committed suicide using ten blasting caps, which resulted in decapitation with complete destruction of the head (4). In a different paper, a pair of cases is described in which fireworks were placed on the head in one instance and in the mouth in another instance, which resulted in the

death of the suicidal victims (5). Davis et al. described a case in which a 23-year-old male committed suicide by the creation and denotation of a self-made pipe bomb that exploded while he was resting his neck upon it (6). A case of suicide by intraoral explosion was reported in which the authors conclude that bilateral symmetrical perioral lacerations are considered a characteristic that enables the determination that the death was nonterrorist related (7).

Although a significant number of suicidal explosion deaths are localized to the head, many cases involve the trunk. Varga and Csabai published a report on a 23-year-old male who had committed suicide by detonating an explosive device attached to his right upper abdomen resulting in destruction of the heart, liver, diaphragm and lungs (8). Siciliano et al. described a case involving the suicidal death of a 32-year-old male who had lain on the ground with his abdomen over a hand grenade (9). He sustained extensive de-



Image 7: Hand swabbings were collected in case testing for explosives was to be undertaken.



Image 8: A photograph of the T-shirt that the decedent was wearing at the time of the explosion.

struction of the thorax and abdomen; his body was divided into two parts joined only by a long narrow strip of abdominal skin. In another case, a man committed suicide via detonation of a hand grenade, by holding the grenade in his left hand and pulling the pin with his right hand; he sustained a fractured right femur that resulted in exsanguination (10).

When evaluating blast injuries, it is important to attempt to distinguish between primary (direct effects of pressure wave on body), secondary (effects of projectiles striking the body), tertiary blast injuries (propelled body striking a fixed object), and quaternary injuries (injury types that cannot otherwise be classified as primary, secondary, or tertiary, but are related to the explosion; examples include building collapsing onto the body and burns related to a subsequent conflagration) (11-14). In our case, the injury pattern consisted of primary blast injuries (e.g., decapitation, gross lacerations of the body surface, blast injuries of gas-containing, hollow and solid organs), without evidence of secondary, tertiary, or quaternary injury types. The symmetrical distribution of suicidal explosion-related injuries described by Rajs et al. was also apparent in our case.

Since explosives can cause a range of injuries from minor trauma to complete destruction and mutilation of the body, forensic pathologists and other investigators can be faced with a number of problems, including identification, scene reconstruction, and cause of death determination. When a body is damaged beyond visual identification, fingerprint comparison, dental comparison, DNA testing, or other scientific means may be the only sources of confirming the victim's identity. In our case, the victim apparently intentionally protected his hands in order to preserve fingerprints for identification.

Radiographs can be helpful in looking for bomb constituents, as well as "unexploded" ordinance. Radiographs can also be useful for identification purposes (e.g., implanted medical devices) (15). Also, trace evidence collection from the victim may be important in determining the type of explosive, if investigation warrants. In the case presented, the authorities deemed

that such testing was not warranted as the case appeared to be clearly suicidal and, despite initial fears, additional armed explosive devices were not discovered. Consequently, it was never determined with certainty what type of explosive was utilized. Clothing examination is also advisable in explosion cases, as patterns of destruction and remnants of explosives can aid in reconstruction of the event. In addition to the collection of trace evidence and clothing from the victim, the autopsy also provides information about the position of the explosive relative to the body and can therefore be essential in determining the manner of death.

The investigation of explosion-related fatalities can be a substantial challenge and requires a collaborative effort among all agencies and departments involved in the investigation. Evaluation of all physical evidence and circumstantial factors derived from the scene investigation and postmortem examination, including the nature, distribution, and extent of the wounds, in conjunction with preceding medical and social history, greatly enhances the investigator's ability to reconstruct the fatal event.

CONCLUSION

While suicidal deaths related to explosives are not common, it is important that forensic pathologists and death investigators be aware of characteristics of explosives-related deaths. Important forensic pathology considerations that are highlighted in the presented case include ensuring the safety of the scene, stressing the importance of interagency cooperation, performing radiology, collecting trace evidence, retaining clothing, ensuring the positive identity of the decedent, and recognizing the importance of documenting injury types and patterns in order to assist in ascertaining body position during the explosion, which can lead to proper understanding of the circumstances of death.

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