G17 Death by Defibrillator: A Unique Homicide by Electrocution

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A 49-year-old mentally challenged black male worked as part of a cleaning crew in a suburban dialysis clinic. According to co-workers while he was mopping the floor he had a seizure and collapsed to the floor. Upon their arrival paramedics found the subject in ventricular fibrillation and despite full advanced cardiac life support measures including external defibrillation he was pronounced dead at a local emergency room.

The autopsy examination showed a well developed, well nourished black male weighing 189 pounds and measuring five feet nine inches in height. Externally there were two irregular burn marks: one on the upper left chest measuring 0.9 x 0.6 inches and the other on the upper right chest measuring 0.5 x 0.4 inches. Internal examination was remarkable for a 415 gram heart and 90% atherosclerotic occlusion of the right coronary artery. The remaining coronary arteries were free of atherosclerotic disease. The lungs and brain were remarkable only for the presence of edema. A scene investigation was performed which disclosed no irregularities or the presence of electrical equipment in the room in which the decedent had worked. The cause of death was attributed to coronary atherosclerosis and the manner of death was natural.

One week later a member of the cleaning crew came forward stating that the initial story had been a fabrication. The crew member revealed that an 18-year-old co-worker, who had tormented the mentally challenged decedent on multiple occasions, had turned on one of the clinics external defibrillators which had a preset energy level of 200 joules. The 18-year-old then coaxed the decedent over and discharged the defibrillator into his chest. Following this statement and police investigation, the cause of death was amended to electrocution and the manner of death was changed to homicide.

The first experiments using electricity to stop the heart were conducted in 1775 using chickens. It was not until 1956, however, that the first successful external defibrillation was performed on humans.

A defibrillator delivers 60,000 watts of electricity in four to five millisecond intervals with a resultant energy level of 300 joules. This level of energy is analogous to a bolt of lightning. A properly used defibrillator delivers a current through the chest wall and heart. This causes the heart to stop and allows the pacemaker cells of the heart to repolarize and re-establish a sinus rhythm.

There are two general types of defibrillators, external and internal. These can be further sub–divided into either manual or automatic/semiautomatic types depending on whether an individual or machine recognizes the ventricular fibrillation. Defibrillators can be further subdivided based on charge direction, monophasic or biphasic of the defibrillator. Defibrillator energy levels range from 0 to 360 joules for manual defibrillators and to a preset range of 200 to 350 joules with automatic/semiautomatic defibrillators.

Among paramedics accidents occur at a rate of 1 per 1,700 defibrillator shocks and 1 per 1,000 for EMTs trained in the use of defibrillators. The most commonly reported injuries in these groups are accidental shocks. In patients, the most common accidental injuries are skin burns, and occasionally myocardial muscle damage. Rarely, an automatic defibrillator may shock a patient with a normal rhythm and cause fatal arrhythmias.

Two cases have been reported in which defibrillators were used in suicide attempts. In one a male nurse discharged the defibrillator into his head. He survived and recovered fully. The second case involved a hospital employee who discharged a defibrillator into his chest. He was found in ventricular fibrillation and died despite resuscitative efforts.

No reported cases of the homicidal use of external defibrillators were found in a review of the literature. This case represents a unique and to date unreported form of homicidal electrocution.

Defibrillator, Electrocution, Homicide

 ** Presenting Author*