

CASE REPORT

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Suicide Using a Hand Grenade

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ABSTRACT: The authors describe an unusual case of suicide that required particular attention to establish whether the victim was murdered, was preparing a terrorist attack or had committed suicide. Examination of the corpse and the crime scene, as well as testimonies, led the authors to determine the real cause of death, namely, an unusual method of suicide.

KEYWORDS: forensic science, suicide, hand grenade, medico-legal investigation, suicide by explosion

The province of Trieste, a city located about 800 km from Rome in the northeast of Italy, with its 255,477 inhabitants (1,2) distributed over six municipalities, has the country's highest suicide rate. In the decade 1985 to 1995, the province recorded over 600 cases of suicide (3) with a suicide rate of 21.6 per 100,000 inhabitants, which far exceeds the national rate (4,5) of 7.2 per 100,000 inhabitants.

The situation of the Trieste province, a real city-province with 90% of the population living in the city itself, has allowed the University Institute of Legal Medicine to undertake an exhaustive and in-depth study on the extent of the suicide-phenomenon in the area. Twenty-five percent of the Trieste population is aged 65 or over, partly as a result of steadily declining birth rates, and about 40% of the cases of suicide that occurred over the past decade involved this age group. Males were more frequent than females, the ratio being 1.8 in Trieste, as against a national ratio of 3 (4,5). Of particular interest are the methods adopted to commit suicide: the most common are throwing for women and hanging for men, while carbon monoxide poisoning, firearms or cutting weapons are less frequent, data which are essentially consistent with the national trends.

Unusual methods (6,7), both in Italy (8) and abroad, include self-burning (9), which recorded five cases in Trieste in the past decade, harakiri (3), electrical current (3), the use of glue (3) or home-modified firearms (10). We report another case rarely observed in the Trieste province or in Italy generally, namely, suicide by explosion.

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Case Report

In the summer of 1996 the corpse of a man, later identified as 32-year-old G.C., torn to pieces by an explosion was found in the scrub in a large park in Trieste. Though accessible through a path, the site of the finding was quite isolated and scarcely frequented. To the right of the path a large fragment of muscle was found in the grass near a tree and, at about 3 m distance, lay the corpse. At a distance of about 6 m from the corpse there was a circular, recently formed hole in the ground measuring about 90 cm in diameter and about 20 cm in depth at the center. Inside the hole, both organic remains and metallic fragments were identified and, not far, the safety pin of a hand grenade; on the left of the hole lay a safety ring, possibly also belonging to a hand grenade. Within a radius of about 9 m from the hole lay another three muscular fragments and one long fragment of skin and subcutaneous tissues; a long section of small intestine hung from a branch.

Other smaller organic fragments could be seen around the hole and on the trees. The corpse, clad in a T-shirt, shorts and trainers, was divided into two parts joined only by a long narrow strip of skin, what remained of the abdomen. The explosion had caused complete destruction of soft bone and visceral tissues beneath the lower part of the thorax and down to the pubis, while hands, feet and face were intact. Tattoos of Chinese ideograms were visible on the anterior thorax and on the right leg; the head was shaven. Thanatological data revealed that death had occurred a few hours earlier, when a loud explosion was heard from a nearby building.

Analysis of the bomb fragments carried out by the bomb-disposal squad of the Carabinieri Antisabotage Team, showed that the bomb was a defensive hand bomb called M52 and manufactured in former Yugoslavia. Its body is made of fragmented semisteel containing about 50 g of high-potential explosive. It has a standard igniter, with a preloaded firing pin and a handspike with a safety pin equipped with a maneuvering ring. Delay is about 3 to 4 seconds.

Discussion

The enquiry and the medicolegal investigations allowed us to conclude that it was not, as had initially been feared, an act of terrorism or an accidental death of a criminal manufacturing a bomb for a terrorist attack, but a case of suicide by explosion (11–13). The localization of the injuries observed on external examination of G.C.'s body suggests that after having primed the hand grenade by removing the safety pin, G.C. lay on the ground with his abdomen over the bomb and awaited the explosion, following the sequence described by Dobi-Babic (14). This hypothesis is con-



FIG. 1—The corpse divided into two parts joined only by a long narrow strip of skin, what remained of the abdomen.

firmed by the absence of lesions from the face and hands, by the extensive destruction of the thorax and abdomen, by the presence of the hole in the ground and by the organic fragments found at different heights around the hole. These data are not compatible with those of accidental deaths, be they for terrorist purposes or not, or with any kind of homicide (15,16).

If the victims themselves handle the explosive the most severe lesions can be observed on the victims' hands, abdomen, thorax or thighs, depending on their position at the time of the explosion, with the presence of shell injuries in various parts of the body and particularly on the face. This is because the explosion does not occur directly in contact with the body, as happens in cases of suicide (14), but at a certain distance—albeit small—from the victim; it is this distance that accounts for irradiation of shell fragments in various directions (15–18,20).

In terrorist attacks, the explosion usually causes a series of lesions the severity of which is proportionate to proximity to the explosion. One may therefore encounter burns of varying severity as well as symmetrical hemorrhages of the vocal chords, fractures of the laryngeal skeleton, rupture of the trachea and lungs (18–20). In the case of a bomb being thrown, lesions can be observed in any part of the body, depending on the area of impact and distance at the time of explosion; some aspects may coincide with those found in suicide. A feature quite commonly encountered in homicide is, however, the total lack of lesions on the hands, except when the victim catches the bomb thrown by the aggressor in a vain attempt to throw it back before the explosion.

The lesions resulting from suicide by explosion may be said to have the following characteristics: (1) localization in the head or, less frequently, in the thorax and abdomen; (2) high level of destructiveness; (3) frequent, though not necessary, involvement of the hands; (4) rare shell wounds in regions that are distant from the center of the explosion (15,20).

Neither the morphological aspects of the subject's lesions nor the scene of the explosion immediately suggested a suicidal event. However, the circumstantial data gathered, including data on the personality of the deceased, allowed us to identify the case as one of suicide. Statements by G.C.'s family indicated an unsatisfied personality, constantly in conflict with his parents and above all with his father who, only a few months before G.C.'s death, had attempted to stab him in the course of a particularly violent argument. The victim had been found guilty of unauthorized possession of weapons.

On different occasions, G.C. had also manifested deep distaste for politicians and the police and had expressed his desire to want to put an end to his life "blowing everyone up." He intended to commit suicide after killing the ten people on the list he claimed to have prepared; he also stated that he had had a bomb for years. The literature on suicide by explosion (20) mentions a number of risk factors for subjects who choose this uncommon method of taking their life.

The most important are somatic diseases or handicaps, mental derangement, a history of drug or alcohol abuse, affective, social and economic factors and, finally, disgust for life (18). Rajs et al.

observed that out of 23 victims of suicide by explosion at least 11 were affected by some form of mental disturbance and 10 had a background of social or affective problems; furthermore, some of these subjects had expressed the intention to "self-explode," as observed in our case. The findings from the site of the explosion together with the data gathered in the police enquiry allowed us to establish that G.C.'s death was no doubt to be attributed to suicide. The hole in the ground produced by the explosion and the absence of lesions from the face and hands suggest that the man had primed the bomb, which had a 3 to 4 second delay, before lying down on the ground with his abdomen over the bomb.

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