

TECHNICAL NOTE

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Fatalities Caused by Spherical Bullets Fired from Blank Cartridge Guns in Istanbul, Turkey

ABSTRACT: Blank cartridge guns are generally regarded as being harmless and are not considered to be firearms in the legal sense in most countries. To show the danger of these guns upon simple modifications, we report 59 fatalities resulting from these simply modified blank cartridge guns in Istanbul, Turkey. The great majority of the victims were males and the age of those ranged from 11 to 61 years. In 55.9% of these cases, homicide was the origin followed by suicide (39%). The right temporal region was detected to be the preferred region in suicidal shots by blank cartridge guns with a frequency of 56.5%. In trial shots, all these guns were detected to discharge steel or lead spherical objects, generally 4 or 5 mm in diameter, successfully. Our findings strongly suggest that these guns should also be considered as handguns in the legal sense.

KEYWORDS: forensic science, gunshot, blank cartridge, spherical bullets, range of fire, autopsy

The acquisition and possession of firearms is limited by law in most countries including Turkey as well. Those prevented by law from obtaining a regular firearm may procure one illicitly or resort to blank cartridge guns. Thus, the development of blank cartridge guns is closely related to the regulations restricting availability of firearms for civilians (1).

Blank cartridge guns are generally regarded as being harmless and are not considered to be firearms in the legal sense in most countries (2). In our country, everyone aged over 18 has the right to buy these guns without needing any license that is necessary for the real ones.

Several reports have been reported showing serious injuries and even fatalities due to unmodified blank cartridge guns (3–5). Upon simple modifications such as discarding the barrier in the barrel, these blank cartridge guns gain the ability to propel small balls placed inside the cartridge or handmade missiles inserted into the tip of the cartridges.

We report 59 fatalities resulting from modified blank cartridge guns and stress the need of legal regulations considering these guns as “handguns” in the legal sense.

Materials and Methods

We retrospectively analyzed the autopsy reports of the Council of Forensic Medicine of Turkey between January 2003 and October 2006 with an emphasis on firearm-related fatalities. There was no

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blank cartridge-related fatality before 2003, thus the starting point of our analysis was 2003.

There were 59 modified blank cartridge gun-related fatalities in this time period. Together with the autopsy findings, the data obtained during the crime scene investigation and ballistic examination of the guns and cartridges were evaluated. Unmodified blank cartridge gun-related fatalities were not included.

Results

There were 59 fatalities resulting from the modified blank cartridge guns in Istanbul between the time period of January 2003 and October 2006. While there was only one case in 2003 and two in 2004, the number of these fatalities was 24 in 2005 and reached 32 in the first 9 months of 2006. The total number of firearm fatalities of the study period was 2395 and modified blank cartridge guns-related fatalities constituted 2.46% of all firearm fatalities. The frequency was 5.95 in the first 9 months of 2006.

The ages of the victims of modified blank cartridge guns ranged from 11 to 61 years (mean 29.25; SD 10.548). Males constituted the majority of the victims accounting for 93.2% and females only for 6.8%. The highest frequency of these gun-related deaths occurred in the 21- to 30-year age group (17; 28.8%), followed by the 11–20 and 31–40 age groups (Table 1).

Of these 59 fatalities, homicide was the origin in 33 cases (55.9%) and this was followed by suicide (23; 39%). There was no information about the manner of death in two cases. There was only one case of accidental origin. All reported suicide cases were male (Table 2).

There were 72 shots in total and the site of the entrance wound was the head and neck in 62.5% of the cases (only cranium in 58.3%), the chest in 26.4%, the abdomen in 2.8%, and lower limb in 1.4% (Fig. 1). There was only one case of inguinal shot. In suicide cases, the right temple was the preferred region with a frequency of 56.5%.

TABLE 1—Distribution of the cases according to age groups.

Age Groups	Male	Female	Total	%
11–20	14	2	16	27.1
21–30	17	0	17	28.8
31–40	14	2	16	27.1
41–50	8	0	8	13.6
51–60	1	0	1	1.7
61–70	1	0	1	1.7
Total	55	4	59	100

TABLE 2—Distribution of the cases according to the mode of death.

Origin	Male	Female	Total	%
Accident	1	0	1	1.7
Suicide	22	1	23	39.0
Homicide	31	2	33	55.9
Unknown	1	1	2	3.4
Total	55	4	59	100

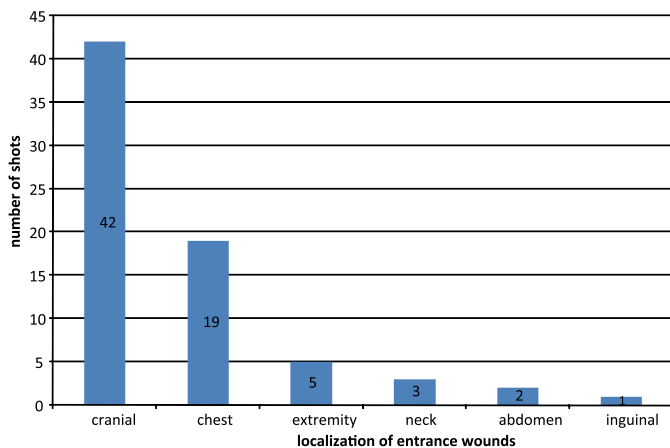


FIG. 1—Distribution of the localizations of the entrance wounds.

TABLE 3—Distribution of the fires on the basis of the range of fire.

Range of Fire	Number of Fire	%
Contact	52	72.2
Intermediate	14	19.4
Distant	4	5.6
Undetermined	2	2.8
Total	72	100

Contact wounds were found in 52 cases (72.2%) and intermediate range in 14 (19.4%). There were only four cases in which the range of the fire was distant (Table 3). In all 23 suicide cases, the range of the fire was contact and in the majority of these contact shot cases, muzzle imprint and circular zone of soot around the entrance were clearly detected, particularly in cranial shots.

Ballistic examination of the guns involved in these cases was performed in the Criminal Laboratories of the Police Department and this examination revealed that the metal device inside the back of barrel that does not allow bullets to be inserted in the firing chamber had been removed. The examination of the cartridges also made it clear that some handmade spherical metals were inserted into the tip of the cartridges. In trial shots, all these guns were



FIG. 2—Photographs showing one example of a modified blank cartridge gun and inside of the barrel in which the barrier had been discarded.



FIG. 3—Original, unmodified blank cartridges and modified blank cartridges to tip of which spherical metals had been inserted (first two on the left).

detected to discharge the metal spherical bullets successfully (Figs. 2 and 3).

Discussion

The development and widespread use of the blank cartridge gun is closely related to the legal regulations restricting availability of firearms for civilians (5). Difficulties in legal sense and

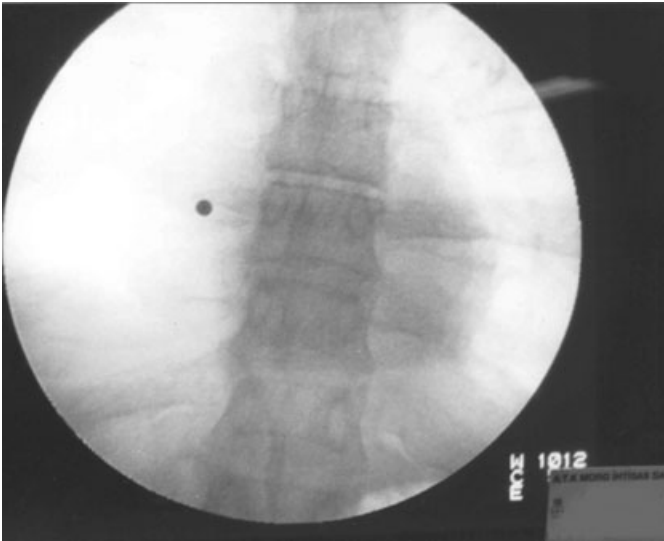


FIG. 4—Radiographic image showing spherical foreign body fired from a blank cartridge gun.

also the costs of having a legal gun in our country direct particularly the young people to obtain a blank cartridge gun. These guns are generally sold in many toy markets without needing a legal license and anyone over 18 years old can purchase these guns.

These guns when modified or even unmodified can cause serious and potentially fatal injuries (6,7). Without doing any changes to the barrel, using blank or tear gas cartridges, firing at contact range can also cause penetration into a human body, including bone (gas originated from gunpowder penetrates the body; 8,9). Üner et al. (10) reported that firing with a 9 mm blank cartridge, it is quite possible to penetrate a 0.5 cm thick piece of plywood, with a result of a hole of 2 cm diameter.

Simple modification of these guns by discarding the barrier in the barrel makes these guns propel small spherical, mostly hand-made bullets. Although these guns are generally regarded as being harmless and not considered firearms in most countries, the reports of serious injuries and fatal outcomes resulting from these guns are increasing in number in the literature. While there was only one case in 2003 and two in 2004, the number of these fatalities increased recently in our country and reached 24 in 2005 and 32 in the first 9 months of 2006. This increase in the number of the fatalities resulting from modified blank cartridge guns in recent years parallels the widespread sale of these guns in the markets and the lack of the legal regulations in our country.

There were 55 male and four female victims in our series. The preponderance of male cases in our autopsy population was also detected in this group. This finding can be explained by the fact that males are involved in criminal activities more than females. Also, this figure reflects the male-dominant social makeup of our community. When age groups were taken into consideration, the highest frequency of these gun-related deaths occurred in the 21- to 30-year age group, followed by the 11–20 and 31–40 age groups. Approximately 83% of the cases were below the age of 40.

The reported serious injuries and even fatalities by the use of these guns are mostly due to illegal tampering of the weapon with the aim of firing live ammunition of the same caliber, by this way converting these toys to a cheap homicide tool (1). These modifications can also lead to suicidal and accidental injuries. There were

23 suicides and 33 homicides. In two cases, the origin of the death could not be determined. There was only one case of accidental fatality resulting from accidental firing of the gun while playing with it. The victim was an 11-year-old girl. These results show that these guns can be successfully used in murders after simple modifications.

It was shown by ballistic experiments that even unmodified blank cartridge guns and very small caliber weapons can fire wire nails and can inflict potentially fatal injuries even at distances of 50 cm (1). The gas pressure released when firing a blank cartridge gun also causes a considerable acceleration of foreign bodies inserted in the front part of the barrel. There are also some reports of guns modified with the purpose of igniting or at least accelerating projectiles, spherical steel bullets, or ammunition cases by firing a gas cartridge (4). The guns involved in murders of our cases were determined to be semiautomatic, Blow mini or Voltran, 8 mm in caliber. The barrier parts in the barrel were determined to be discarded and the cartridges used for these guns were special blank cartridges in which there were spherical steels inserted into the tips of these blank cartridges. At autopsies of these cases, we obtained spherical steel bullets with a diameter ranging between 4 and 5 mm (Fig. 4).

There were in total 72 shots and 52 of these were inflicted at the contact range of fire. In 14 cases, the range of the fire was intermediate and distant in four cases. In two cases due to the long period of hospitality and the presence of healing findings around the wounds, the range of the fire could not be determined.

The right temporal region is a very frequent site of placements of suicidal gunshots (11–13). This has been confirmed for suicide cases using gas weapons and is also reflected in our series of cases. The right temporal region was the preferred site of fire in 13 of 23 suicide cases. All the suicidal wounds were contact wounds. The entrance wounds were found to be in the cranial region in 42 of the total 72 shots; this was followed by the chest region with 17 shots. Injury of the heart and main arteries were common in chest shots. There was only one case of inguinal shot and in this case the spherical bullet was detected to tear the femoral artery.

Our results indicate that these blank cartridge guns which have serious, even lethal, injuring potential, can be perfectly used in suicide and homicides upon simple modifications and for this reason, these guns should also be considered as handguns in the legal sense.

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