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An Unusual Tear-Gas Gun Fatality

The potential for serious and fatal wounds by tear-gas pen guns firing both conventional tear-gas and fixed metallic ammunition has been extensively studied and reported by Stahl, Jones, and others [1-5]. The case reported here involves the "weapon as missile" and illustrates an additional potential for injury or fatality to the shooter when these weapons are loaded with metallic ammunition. This case is mentioned in passing by Jones [3], but to our knowledge no similar case has been fully reported.

Case Report

The decedent was a 23-year-old black male. History obtained from police and friends indicated that he had acquired a pen-type tear-gas gun, and had, on several occasions, fired it using standard .45 ACP ammunition. On the night of his death, he was showing the weapon to a lady friend, who became disinterested and went to a nearby diner. Shortly thereafter, she heard a shot from the alley. The decedent was found lying on the pavement, with the muzzle of the weapon protruding from the inner canthus of the right eye. He was unconscious, but breathing, and was rushed to a hospital. Emergency treatment was instituted and skull X-rays were taken (Fig. 1), but he died on the X-ray table.

Autopsy

At autopsy, the muzzle of the weapon was protruding from the inner canthus of the right eye to a distance of about 1 in. (25 mm). The weapon was angled upward, backward, and toward the left, and was solidly fixed in the skull (Fig. 2). When the calvarium was removed, there was flattening of the gyri, and diffuse hemorrhage beneath the pia-arachnoid. The base of the weapon projected into the cranial vault through the sella turcica, penetrating the inferior surface of the left cerebral hemisphere to a depth of 4 in. (102 mm) (Fig. 3). The optic chiasm was severed, and there was massive laceration of the brain tissue and hemorrhage into the left ventricle. The right eyeball was compressed laterally but, surprisingly, was not damaged. A dermal nitrate test yielded positive results from the right palm. The blood was negative for alcohol and common drugs of abuse.

The Weapon

The weapon was a conventional pen-type gas gun, 6 in. (152 mm) long (Figs. 4 and 5). The barrel portion was unscrewed, and the chamber contained a fired .45 ACP cartridge case. The base of the cartridge fitted perfectly into a recess in the proximal portion containing the firing pin, and the weapon showed no evidence of alteration. The barrel por-

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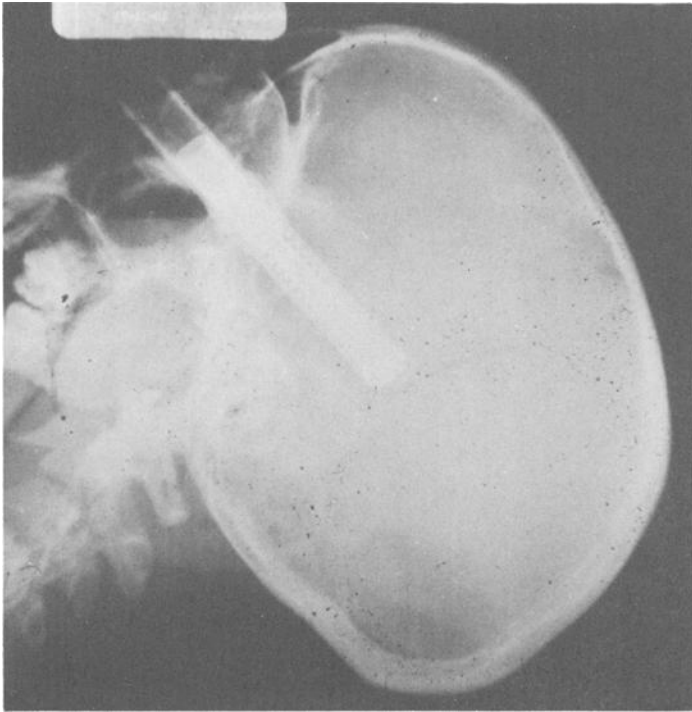


FIG. 1—*Lateral skull film of victim on admission, showing weapon in situ and containing fired .45 cartridge.*



FIG. 2—*Muzzle of weapon protruding from right orbit.*

tion was a smoothbore tube of approximately .45 caliber. The pocket clip was missing. Locking was accomplished by pulling the knurled knob at the base, and firing by pressing a small ball detent which was normally covered by the pocket clip. On the barrel portion was engraved “.45 cal.” and a serial number was present on the knurled cocking knob. No brand name was found.



FIG. 3—*Protrusion of weapon into cranial vault.*

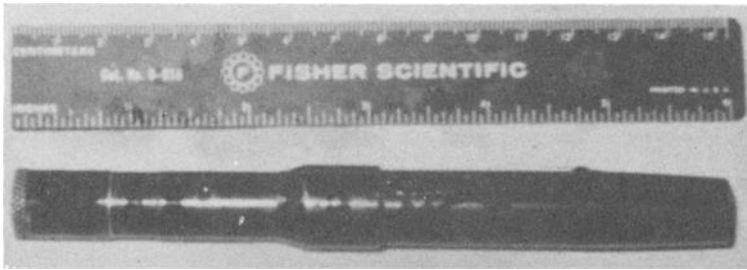


FIG. 4—*Assembled weapon.*

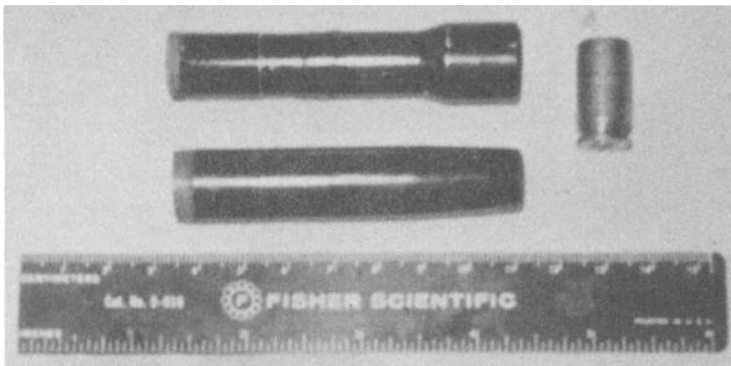


FIG. 5—*Weapon disassembled, with fired cartridge.*

Discussion

Tear-gas pen guns are manufactured and sold for the purpose of personal protection, and are not considered firearms by federal statute unless they have been altered to fire fixed metallic ammunition, or will fire such ammunition without alteration [4]. The conventional shells fire a mist of *ortho*-chlorobenzalmalonitrile (CS) or chloroacetophenone (CN) and can cause serious injury, including blindness, if fired into the face at close range [2,4].

The weapons are small and easily concealable, and resemble a variety of common objects, such as fountain-pens, mechanical pencils, and other objects. They are manufactured in a variety of calibers, from .22 through .45, and many of the older and foreign models will fire metallic ammunition in these calibers without alteration. The mechanical and ballistic characteristics of these weapons have been extensively studied [1,3,5], and the weapons have been found to show a surprising degree of accuracy and casualty potential with metallic cartridges at ranges as great as 50 ft. (15 m).

These studies [1,3,5] also document the potential for injury to the shooter. Although the pen guns were more durable than expected, some withstanding multiple firings with large-caliber handgun cartridges and the .270 rifle cartridge, others disintegrated, revealing an obvious hazard from fragments of weapon and cartridge.

The recoil generated by such large handgun cartridges as the .45 ACP and the .44 special and .44 magnum is considerable, even in the heavy handguns chambered for these cartridges. In a small, smooth tubular weapon, devoid of conventional grips and weighing only a few ounces, Newton's third law can, as it did in this case, easily convert the weapon itself into a lethal missile.

Summary

A case of death involving a tear-gas pen gun, firing .45 ACP metallic ammunition, is presented, in which the recoil generated by the cartridge converted the weapon into a missile, penetrating the brain of the shooter. The injury potential to shooter and shooting victim is briefly discussed, and the added hazard to the shooter illustrated by this case is noted.

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