CASE REPORT

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A Suicidal Wound Inflicted by a "Power Head"

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ABSTRACT: A case of suicide using a device known as a "power head" is presented. The devices, which are used in underwater fishing and other activities, are common and readily available in many areas where diving is practiced, but we are unaware of previously published cases of fatal injuries resulting from their use. The appearance and functioning of a power head are described, as well as regulations concerning the devices.

KEYWORDS: pathology and biology, gunshot wounds, power head, suicide.

Case History

A 25-year-old white male began arguing with his girlfriend while they were at a party. They subsequently left the party and returned to his home, where the argument continued in the bedroom. The decedent was sitting on his bed, and, during a heated portion of the argument, he reached into a night stand drawer and obtained a loaded "power head" which he kept there. He forcibly jammed the device against the right side of his head, causing it to discharge, and fell to the floor with a fatal gunshot wound to the head. At autopsy, the decedent had a typical stellate contact gunshot wound of the right temporal region (Fig. 1). No muzzle imprint was discernible upon re-approximation of the wound edges, but the central wound edges were blackened and seared, and soot was deposited in the depths of the wound and on the surface of the calvarium. The skull defect displayed internal beveling. A large area of cavitation and laceration traversed both cerebral hemispheres, and a deformed medium caliber lead projectile was recovered from the left parietal lobe. No soot was identifiable on the decedent's hands. The suicide weapon was retrieved by police detectives, and was found to have blowback of blood and tissue on its barrel. It was of .38 Special/ .357 Magnum caliber, and a fired .38 Special +P cartridge casing was in the device. An unfired cartridge with a lead hollow-point projectile was also found on the scene.

Discussion

This case represents a common wound produced by a relatively common instrument applied in an uncommon manner. The marine power head is a device designed primarily

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FIG. 1—*Autopsy photograph showing stellate hard contact gunshot wound produced by power head.*

for shark protection, harvesting fish, or (in south Florida) hunting alligators, and it is not unusual in areas where scuba diving and snorkeling are practiced. The device is also known by a variety of other names, among them "shark stick" and "fish popper." It consists basically of a very short non-rifled barrel tube, barely long enough to contain the cartridge for which it is chambered. Onto the end of the barrel is screwed a cap-like breech, into which protrudes a firing pin held back out of the breech by spring pressure (Figs. 2 and 3). The firing pin, in turn, is sometimes attached to a metal rod, but usually also has a flared threaded base, allowing it to be screwed onto a standard diving pole spear. Abrupt pressure on the rod or pole overcomes the spring holding the firing pin out of the breech, forcing the firing pin into the breech cap where is impacts the primer of the cartridge in the barrel tube, causing it to discharge. The usual method of firing involves forcibly jamming the barrel end of the weapon against the surface of the intended target. A number of different power-head designs are available, and most can be obtained in a variety of calibers at diving shops. Handgun calibers are reportedly the most popular (that is, .38 special/.357 Magnum and .44 special Magnum), but rifle (such as .223 Remington and .444 Marlin) and shotgun (usually 12 gauge) chamberings are also available.

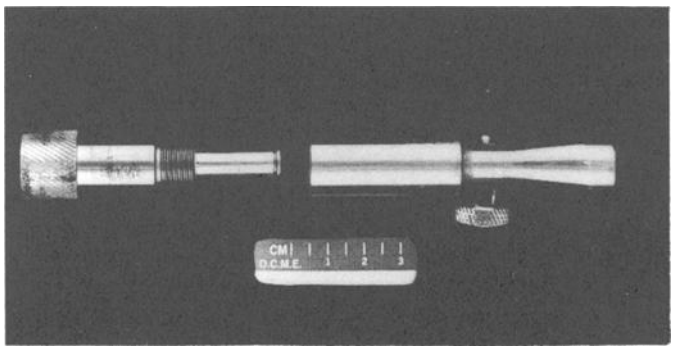

FIG. 2—*Photograph of power head with barrel unscrewed and cartridge partially inserted. Note firing pin base is to right and barrel is to left.*

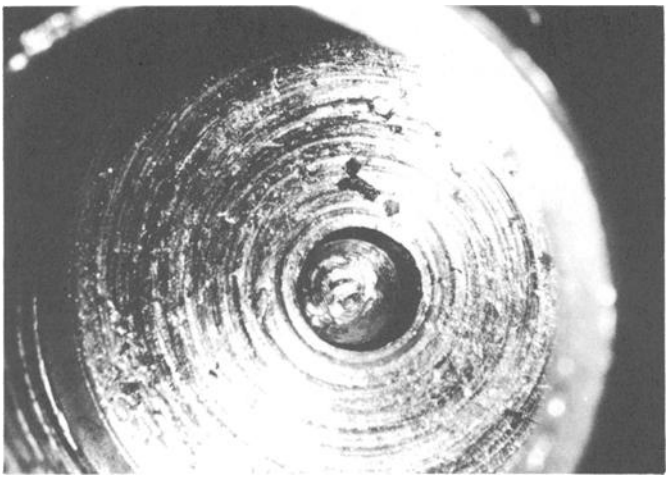

FIG. 3—*Macro photograph of breech cap of power head showing firing pin protruding into chamber with compression of firing pin spring.*

As would be expected, the wound from this device was essentially identical to a contact wound from any conventional firearm. The barrels of power heads are generally round, and would be expected to leave a non-descript muzzle imprint, if any. Because such a weapon must be employed in a hard contact fashion in order to discharge (barring any extensive modification of the firing mechanism), it is apparent that blank cartridges may also produce severe or fatal wounds. In fact, some manufacturers recommend that blanks be employed exclusively in their devices because standard cartridges are no more effective, and can be much more dangerous if an accidental discharge occurs outside of water [*1*]. Underwater, the distance of projectile travel would be markedly shortened, but a conventional cartridge could still pose a significant safety hazard if improperly employed. The force required to compress the firing pin spring and fire the weapon is not great (910 g in our case), so accidental discharges could easily be initiated by a small bump or jolt. As such, most power heads employ a firing pin block of some type to prevent movement of the pin while not actively employing the device.

Power heads are not regulated by the National Firearms Act as long as the firing pin has a permanently attached shaft of at least 26 inches [*2*]. As such, most are manufactured with a slender metal rod soldered or otherwise attached to the threaded base of the firing pin. In practice, this rod is often removed and the device is attached to an appropriately threaded pole of desired length. This action, in addition to making the power head (minus its pole) highly concealable, renders it a contraband device, subject to confiscation with potential criminal penalties for its possessor [*2,3*].

Though such devices are common in many areas, this is the first case of a fatal injury produced by a power head encountered in our office, and we have found no reports of such injury in the literature. Contact wounds would be expected to occur with these devices, but it is not difficult to conceive of methods to modify them to fire without contacting their subjects, albeit with poor accuracy. In fact, the Firearms Technology Branch of the Bureau of Alcohol, Tobacco, and Firearms has encountered previous attempts to manufacture firearms based on the power head mechanism [*2*]. As the devices are small, readily available, easy to transport, and potentially lethal, forensic pathologists and law enforcement officers should be aware of their existence, appearance, and function.

References

[1] Product Information Publication, *Power Heads*, ABBiller Company.
[2] Consultation, Firearms Technology Branch, Bureau of Alcohol, Tobacco, and Firearms, Washington, D.C., September 8, 1993.
[3] United States Code, Title 26, Chapter 53, Section 5845E.

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