

Suicide attempt using a cartridge clamped in a vice – a case report

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Abstract

The article describes an interesting case of a gunshot wound caused by a bullet and by fragments of a ruptured cartridge case from a hunting rifle cartridge that was fired in the jaws of a bench vice by a young man attempting to commit suicide.

Keywords: hunting rifle cartridge, bullet, vice, gunshot injuries.

In June 2023, a 23-year-old man was admitted to the Prof. Z. Religa Hospital in Słubice with numerous small incised wounds to the left forearm and to the face around the mouth, and with an entry wound below the navel. Imaging (Photo 1)



Photo 1. The questioned bullet lodged in the injured man's abdominal cavity, visible on an X-ray

revealed a bullet in the lesser pelvis. During surgical treatment a laparotomy was performed and the bullet was removed from the abdominal cavity (Photo 2). The man stated that, after a disappoint-

ment in love, he had attempted to commit suicide by placing a small-arms cartridge in his possession between the jaws of a bench vice in the garage of his house and squeezing its case with the vice jaws until it fired. At the moment the cartridge fired, he was leaning over the vice in such a way that the bullet struck him in the abdomen. The numerous small wounds, 0.5–1 mm in diameter, to the left arm and around the mouth may have been caused by fragments of the ruptured cartridge case. During the scene examination of the garage, four fragments of brass-coloured sheet metal were found in the area of the metal table



Photo 2. The questioned bullet recovered from the injured man's body and the fragments of the ruptured cartridge case found at the scene

with the vice; they may have been fragments of a cartridge case ruptured when the cartridge lodged in the vice jaws was fired. The table also held a utility knife and a hammer, on which stains of a substance macroscopically resembling blood were revealed. The questioned bullet and the four brass-coloured metal items were submitted, together with documentation from the case file, to the Forensic Laboratory of the Provincial Police Headquarters in Wrocław for firearms examination. The questioned items were examined, including by microscopy, and it was found that:

- the questioned bullet was a soft-point “Evolution Green” (“Evo Green”) bullet manufactured by the German company RWS. The bullet had a nickel-plated brass jacket, closed at the nose with a gold-coloured plastic tip. Eight radially arranged linear indentations ran from the front edge of the jacket (where the plastic tip is seated), facilitating its rupture as the bullet expands. The cylindrical part of the bullet bore two cannelures; the lower one, into which the case neck is crimped, was 1.2 mm wide. The questioned bullet was weighed (12.02 g) and then examined under a stereomicroscope. Microscopic examination revealed no marks of firearm mechanisms on the bullet, in particular no marks of its having been fired through the bore of a firearm of the appropriate calibre. Furthermore, the bullet was not deformed and bore no marks of impact against a hard surface. Microscopic examination revealed a brownish substance resembling dried blood on the surfaces of the bullet. No manufacturer’s marking was found on the bullet.
- the four fragments of brass sheet measured 21.5×8.6 mm, 11.6×8.8 mm, 8.5×11.3 mm and 13.1×7.6 mm, with a wall thickness of 0.4 mm. The items examined were deformed and bore signs of tearing and bending. The questioned items were examined under a stereomicroscope. Microscopic examination showed that the edges of the items

bore signs of tearing, except for two edges on two of the sheet fragments, whose surfaces were smooth (without signs of tearing of the sheet structure). Along each of these edges there are two parallel linear indentations forming a band 1.1 mm wide. These indentations, present on one side of the surfaces of the items, correspond to the cannelure on the questioned bullet, which serves to seat the bullet by crimping the case neck into it. In addition, at a distance of approximately 8 mm from the flat edges of the items there are linear marks corresponding to the line of the case neck and its shoulder. These features indicated that the items were fragments of the ruptured bottle-necked case of a rifle or hunting rifle cartridge. The case head, which should bear the manufacturer’s markings, was not among the case fragments examined. During the examination, the torn edges of the case fragments were compared for a physical fit, with a negative result: they could not be fitted together. It was also found that the surfaces of the case fragments differ in colour and texture on each side, and that these features occur on all the fragments examined, which corresponds to the outer (matt) and inner (glossy) surfaces of the case.

According to RWS catalogue data, 9.3 mm “Evo Green” bullets weighing 12 g are used to load only 9.3×62 mm hunting rifle cartridges. The questioned case fragments bearing the marks of the neck section were therefore compared with the corresponding section of a 9.3×62 mm hunting rifle cartridge case, and they were found to be consistent (the case neck of a cartridge of this system is 7.6 mm long). An analysis of all the evidence gathered and the findings made during the examination provided grounds for concluding that the questioned bullet and the case fragments came from a single German-made 9.3×62 mm hunting rifle cartridge that had been fired outside a firearm, e.g. in the jaws of a vice.



Photo 3. 9.3×62 mm hunting rifle cartridges of various manufacturers (from left): Sellier & Bellot, Norma, Norma with a “Plastic Point” bullet, Lapua with a “Mega” bullet, Lapua with a “GPA” bullet, RWS with a “TUG” bullet, T with an “SP” bullet

Attempts were therefore made to fire the primers of cartridges of four systems (a Polish-made 5.56×45 mm NATO intermediate cartridge, a Czech-made 30-06 Springfield hunting rifle cartridge, a Czech-made 8×57 mm JS hunting rifle cartridge and a Finnish-made 9.3×62 mm hunting rifle cartridge) in the manner described by the injured man, using two bench vices of different sizes. Cases from the disassembled cartridges listed above, with the primers still in their heads, were placed in the vice jaws on the assumption that firing the primer would be equivalent to firing the cartridge. The result was negative. Despite maximum force being applied when crushing the case heads laterally in the jaws of vices with handles of different lengths, the primers did not fire; their cups were deformed, flattened laterally, bulged and pushed out of the primer pockets, and in the case of the primer of the 9.3×62 mm hunting rifle cartridge case the bottom of the primer cup came off (Photo 4). The results of these



Photo 4. View of the cartridge case heads crushed laterally in the vice jaws. The bottom of the primer cup of the Finnish-made 9.3×62 mm hunting rifle cartridge case has come off. The primers did not fire

tests provide grounds for concluding that, in the suicide attempt, the injured man did not fire the cartridge in the vice jaws by crushing its case, but by striking the primer with a tool (e.g. the hammer found on the table), which would correspond to the location of the entry wound and the course of the wound track in his abdominal cavity. The injured man most probably stood over the vice, in whose jaws the cartridge was held with the bullet pointing upwards, and, in order to fire it from below, bent his torso forward in such a way that the bullet of the cartridge was pressed against his abdomen at the moment of firing. It should be added that the 9.3×62 mm hunting rifle cartridge used in the suicide attempt is a high-energy cartridge, and the muzzle energy of its bullet when fired from a firearm is, according to the manufacturer's catalogue data, 4,608 J.

Conclusions

Firing a complete small-arms round outside a firearm entails the risk of the bullet breaching the skin and penetrating deep into the human body, despite the absence of the sealing and guidance provided by the barrel or by an element replacing the barrel. In the case examined, firing the cartridge held in the jaws of a bench vice caused the high-energy hunting rifle cartridge to rupture; its bullet made an entry wound

in the skin of the young man's abdomen and formed a blind wound track in his abdominal cavity, causing relatively minor injuries for this type of ammunition. In the tests conducted to reconstruct the course of events, it was not possible to fire cartridges of various systems, calibres and manufacturers by laterally crushing the heads of cartridge cases clamped in vices, which indicates that the cartridge was fired in the usual way, by striking the primer.

References

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