D41 "If I Had a Hammer, I'd ...": Rare Case of a Hammer Initiated Self-Inflicted Bullet Wound

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After attending this presentation, attendees will be introduced to the unique use of a tool as an improvised firearm.

This presentation will impact the forensic science community by expanding the knowledge of forensic investigators involved in the investigation of improvised firearms.

A 33-year-old Caucasian male presented to an urban Trauma Center with a complaint of pain from a reported self-inflicted gunshot wound to the left lower quadrant. There was no active bleeding and the patient only complained of slight pain. The patient admitted that this was a suicide attempt but denied having a history of depression. However, upon further questioning, he admitted to a prior attempted suicide four months earlier by overdosing on acetaminophen. At that time his family had removed his .22 caliber pistol, but not the ammunition, from the home.

Examination of the abdominal wall revealed a small, round and abraded tissue defect without evidence of soot or tattooing. Plain radiographs and a contrasted CT scan of his abdomen and pelvis revealed a round nose bullet in the subcutaneous tissue of the left anterior abdominal wall. There was no evidence of intra-abdominal injury or fascia penetration from the bullet. When questioned about the weapon, the patient explained that he had put the head of a hammer on his abdomen, then wedged a cartridge in the claw of the hammer and used a second hammer to strike its base. When the cartridge discharged, the bullet traveled into the subcutaneous tissue and stopped. When viewed on CT scan, the projectile appeared to have traveled at a 45- degree downward angle from left to right. The patient reported the cartridge was a .22 caliber long rifle.

The use of improvised firearms to inflict injury upon oneself or others is unusual. One of the reasons that handmade firearms are rare is because they usually do not provide the projectile enough velocity to travel very far and are generally ineffective. As this case indicates, the projectile had only enough energy to penetrate the skin and not enough to enter the abdominal cavity.

When fired from a gun, a .22 rimfire bullet reaches the "optimum velocity" in a 14 to 16-inch barrel. Depending upon the weight of the bullet the maximum velocity of a handgun bullet is about 1350 ft/s, but without the barrel, the bullet does not have the energy behind it necessary to reach that velocity. The minimum velocity reported for a .22 caliber bullet with a weight 16.5 grams to penetrate the skin is 245 ft/sec. Obviously the bullet must have lost its velocity very quickly because it only succeeded in penetrating the skin and caused no intra- abdominal injuries. This failed suicide attempt presumably left no lasting traumatic injuries. The patient was admitted to the surgical service for observation with an inpatient psychiatric evaluation.

In this case, the bullet wound was a contact wound. However, the bullet and *not the barrel of the gun,* was in contact with the skin when the projectile was discharged. Because of this, the wound does not present with the usual characteristics of a contact gunshot wound. This bullet wound of contact is unique, as it has none of characteristics typical of contact gunshot wounds.

The use of a claw hammer as a platform to discharge a round is intended to inform forensic investigators of an unusual type of improvised firearm.

Improvised Firearm, Hammer, Gunshot Wound

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