



H129 An Atypical Suicide by Submachine Gun: A Case Report

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The goal of this presentation is to disclose the forensic and imaging evidence that led to the hypothesis of suicide by submachine gun, namely, the characteristics of entrance and exit wounds and the trajectories and specifications of the weapon used.

This presentation will impact the forensic science community by exposing an atypical suicide method rarely described in the literature.

After a shooting in the neighborhood, Mr. K entrenched himself in his house, waiting for the police. The Groupe d'Intervention de la Gendarmerie Nationale (GIGN), an elite unit of the French police, laid siege to the house for 24 hours before hearing gunshots from inside. During their intervention, they found Mr. K dead, cross-legged on the floor, backing onto a bed frame, collapsed on his right side, with several gunshot wounds on his body. Next to the cadaver, they found a submachine gun whose safety lever, located on the back of the pistol grip, was neutralized with tape.

The weapon, a 1949 French submachine gun from the weapons manufacturer of Chatellerault, was loaded with 9×19mm Parabellum bullets, full metal jacket. Four cartridges seem to have been loaded into the weapon, three of which seemed to have entered the victim. The cadaver was then transported to the forensic institute of Nancy, France, for further examination.

Postmortem Computed Tomography (CT) revealed a wound on the left section of the occipital bone, a fracture of the seventh cervical vertebra, a fracture of the back of the left sixth rib, a wound in the manubrium, and a defect in the third costovertebral junction. The 3D reconstruction was rendered using the global illumination technique and revealed the presence of a metallic object in the neck and of metallic fragments near the two sternal lesions.

The autopsy revealed three ballistic wounds. All entrance wounds were located on the front of the thorax and neck and the trajectories were nearly in the sagittal plane, oblique from bottom to top. The first projectile penetrated on the left side of the sternum and crossed the proximal aorta and the back part of the left sixth rib. The entrance wound presented a zone of soot easily swiped away and revealing blackened seared margins, typical of a loose-contact wound. The exit wound was unusual due to a probable fragmentation of the projectile and the presence of the bed against the skin. It consisted of two shored exits, with elongated orifices and abrasion edges. The second projectile penetrated next to the jugular notch of the sternum and transfixated the trachea and the sixth cervical vertebra. The entrance wound was very unusual; it consisted of a large round opening (4x3cm) with irregular abraded edges. The wound was only penetrating, and the projectile was found in the subcutaneous tissue of the back of the neck. The third projectile penetrated under the chin, on the median line, fractured the hyoid bone, penetrated the base of the skull, and exited through the occipital bone. The entrance wound presented a blackened, seared margin on the upper side, suggesting a near-contact angled wound. The exit wound was typical with a beveled-out hole in the skull and a stellate skin lesion.

The first and third projectiles were the cause of lethal lesions (perforation of the aorta and the brain). The characteristics of the entrance wounds suggested short-range shots. Finally, the first trajectory was nearly horizontal and the two others were more obliquely directed upward. One can therefore imagine a first loose-contact shot in the sternum and the next two shots were due to the neutralization of the safety lever, keeping the weapon in automatic mode. With a firing rate of 600 rounds per minute, five milliseconds were sufficient to fire the four loaded bullets, and recoil can explain the changes in trajectories. In conclusion, the forensic evidence was consistent with the hypothesis of suicide, given the conditions of cadaver discovery and the observations reported by the investigators.

Atypical Suicide, Submachine Gun, Global Illumination