B100 Shotgun Hunting Fatalities—How to Be Wrong in Reconstruction! Pitfalls for the Medical Examiner and the Ballistics Expert: A Case Report

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Learning Overview: After attending this presentation, attendees will be aware of the importance of the collaboration of a medical examiner and a ballistic expert in the reconstruction of the dynamics of a hunting accident.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating the usefulness of combining forensic ballistic investigations and the remaining investigations, such as on-spot surveys, testimonial collections, and examination of bullets and cartridges, in order to provide a motivated, scientifically valid and therefore concretely usable hypothesis in legal framework.

In gunshot causalities, the only analysis of biological data may be insufficient for reconstructive purposes. In fact, the reconstruction of the events that had made use of a firearm is a problem that apparently escapes the exclusive pathological study of ballistic agent injuries and requires an integrated assessment by others criminalistic and ballistic surveys.

The purpose of this presentation is to present the case of a 60-year-old male hunter dead in a hunting accident that took place in November 2018 in Tuscany, Italy. During a boar hunt inside an olive grove, a position line was set up, on whose trajectory, at a distance of about 40 meters from each other, five hunters were positioned. The current legislation on hunting wild boars stated that hunters could fire only in front of them. In the event that the boar had passed the same line, it was mandatory to secure the gun and rotate 180° before aiming the gun again, thus avoiding hitting the hunters placed on the same line. At the sight of the boar, some of the hunters fired a total of four rifle shots. Once the sequence of shots was over, one of the hunters, C.F., was found dead on the ground. One of the hunters, F.L., aware of having fired without respecting the rules, pleaded guilty. The results of the medical legal investigation (site inspection, body examination) were influenced by the self-accusation of F.L.; in fact, they lacked the fundamental elements such as surveys, the analysis of weapon bullets and used cartridges, orography, and bullet penetration and F.L. was sentenced.

In a second-degree criminal trial, the analyses, carried out later, instead evaluated all the elements left out by the technical consultant; in particular, the shot and bullet distance were studied. They were incompatible with the respective positions of the firing, presumed shooter, thus excluding the responsibility of F.L.

It should be remembered that in assessing the firing distance, the evaluation of the penetration of those bullets in the various biological structures crossed by the bullets is of primary importance. In this case, the distance between the victim and the shooter was studied using Sellier's formulas. It was calculated that the bullet exploded at a distance of 40m; that is the distance between C.F. (the victim) and F.L. (alleged shooter) that should have had a penetration capacity so that it went out of the body. On the contrary, the external body examination showed the presence of the bullet held in correspondence of the scalp in the temporal region. Therefore, the presence through a blind bottom, with the retained bullet, indicates that the bullet could not have exploded at a distance of less than about 100m.

Another important element taken into consideration was the one of the height difference between the two hunters, which was six meters, obtained by taking into consideration the orographic elements.

Therefore, based on these results, together with the data provided by the autopsy, and with the integration of the ballistic survey investigations, it has been shown that the distance between the victim and the shooter had to be greater than 100m and that the difference between the mutual positions of firing and shooting excluded that the shot had been fired by the F.L. hunter.[1-6]

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Ballistics Expert, Shotgun Injuries, Formula Sellier