B113 Case Report: Tangential Gunshot Wound With MagSafe Ammunition

Amy V. Rapkiewicz, MD, National Institute of Health Department of Pathology, 10 Center Drive, Building 10-2N212, Bethesda, MD 20892; Charles A. Catatnese, MD, Office of the Chief Medical Examiner, New York City, SUNY/Downstate/Kings County Hospital Department of Pathology, Brooklyn, NY; Robert Tamburri and Mark E. Basoa, New York City Police Department, Firearms Analysis Section, 150-14 Jamaica Avenue, Jamaica, NY*

The goal of this presentation is to present to the forensic community a case report demonstrating the characteristic autopsy findings that can be utilized to identify wounding patterns of unconventional prefragmented ammunition such as MagSafe ammunition.

This poster will present the wound characteristics that can be used to identify MagSafe ammunition. MagSafe ammunition is a type of unconventional prefragmented handgun ammunition that has great wounding potential and therefore should be differentiated from other types of prefragmented ammunition.

This case reports describes the fatal gunshot wound sustained by a 35-year-old woman. The unique features reported herein are the nature of the wound and the ammunition used to produce it. The MagSafe bullet produced a tangential type wound with an underlying keyhole defect of the skull. The wound has an entrance defect that is contiguous with the exit defect. The projectile disrupted the skin, subcutaneous tissue, bone and brain matter leaving an elongated central defect in its path. The skin defect is edged by lacerations, which are formed by skin tags. A skin tag is defined as an elongated fragment of tissue connected to the margin of a graze wound and projecting into its central portion. This injury is a classic example of skin tag formation as a result of damage by a tangential projectile. The trajectory can be determined because the skin has not been altered by decomposition, fire or surgical intervention. The lacerated skin has a semicircular abraded edge at the anterior aspect typical of an entrance defect. The posterior aspect of the wound or exit end is split. It should be noted that the lacerated border of the skin tag is the edge toward the weapon and the abraded border adjacent to the skin tag is away from the weapon. The lacerated edge will typically have irregular margins and tissue bridging.

MagSafe Ammo is a type of prefragmented handgun ammunition. Its construction consists of a copper jacket filled with birdshot that is potted in a hard epoxy resin. MagSafe utilizes a poured epoxy cap to seal the birdshot in the copper jacket. There are two distinctive features of MagSafe ammunition: differential thickness of the epoxy cap and the ability to choose the shot size. The poured epoxy cap can be made thin for early fragmentation or thick for greater penetration. They are light high-speed projectiles that deliver a huge release of kinetic energy and fragment upon impact with a target. While this rapid transfer of energy decreases penetration, it imparts remarkably devastating wounding capabilities with less over-penetration and ricochet. The pieces of plastic or epoxy can be used to identify this specific type of ammunition. Gunshot wounds produced by this ammunition require careful examination in order to differentiate them from a shotgun or shot shell ammunition. There are many clues that can be used to accomplish this task.

In summary, this presentation is of a MagSafe gunshot wound to the head with unique identifying features. Prefragmented bullets such as this one are designed to release tremendous kinetic energy with decreased penetration and ricochet. Differentiating types of prefragmented ammunition used to inflict gunshot wounds may be achieved by analysis of the fragmented bullet components.

MagSafe Ammunition, Prefragmented Ammunition, Tangential Wounds

 ** Presenting Author*