G79 .17 HMR – It's Not Your Father's .22

J.C. Upshaw Downs, MD, Coastal Regional Laboratory Georgia Bureau of Investigation, 925A Mohawk Street, Savannah, GA 31419; and Ron Van Fleet, BS, Donelle L. Pyle, MS, and Shannon Walden, Georgia Bureau of Investigation, 925A Mohawk Street, Savannah, GA 31419*

The goal of this presentation is to present a case study of a suicide employing a .17 HMR to familiarize the forensics community with this round and potential resulting injuries resultant there from.

Familiarity of the various forensic disciplines with new rounds should impact the forensic community and/or humanity by allowing recognition of same when encountered in a case, a potential significant benefit in cases where o weapon is recovered at the scene.

This case study involves the death of a 27-year-old male who had been involved in a physical altercation with his wife on the morning of his death. The wife exited the residence and, on hearing a gunshot, re-entered to find the decedent with a fatal intra-oral gunshot wound. Recovered from the scene were a box of .17 HMR rounds.

At autopsy, the subject had a 3⁄4 inch stellate contact midline intra-oral gunshot wound with a surrounding 1½ inch area of soot on the roof of the mouth. The shot fractured the floor of the skull and continued to the left parietal brain where the projectile was recovered at the brain surface. Typical subarachnoid hemorrhages and cortical contusions were associated with the wound. Externally, the decedent had an impression on his chest corresponding to a spent .17 HMR casing.

The .17 HMR TNT cartridge is marketed by CCI as a small varmint round with a hollow point tip for "explosive performance." A follow-up, the .17 HMR GamePoint round was introduced in 2004, marketed as a "dimple-tip bullet [which] mushrooms like a big game bullet instead of fragmenting like a varmint bullet. This greatly reduces damage to edible meat!" A comparison of the .17 HMRs with the various CCI .22 car- tridges (http://www.cci-ammunition.com/default.asp) shows velocities for the .17 (2375 & 2525 ft/sec) exceeding the .22 magnum (1875 ft/sec) and energy (250 & 241 ft-lbs) approaching the .22 magnum (312 ft-lbs) – see below.

Round	Weight (grains)	Velocity (ft/sec)	Energy (ft-lbs)
.22 short	29	1080	75
.22 long rifle	40	1235	135
.22 magnum	40	1875	312
.17 HMR GamePoint	20	2375	250
.17 HMR TNT	17	2525	241

A potential concern is an attempt (presumably by a novice) to fire such a .17 caliber from a .22 weapon. The .22 magnum may be able to chamber the .17 HMR, however, the 0.05 inch step-down from the casing to the bullet would provide for release of much of the propulsive gases. In theory, this might create problems for the shooter.

In summary, the .17 HMR round has significant velocity and energy. While causing far more damage than a typical .22 caliber round, the tissue destruction is markedly less than that seen with larger calibers.

Conclusion: Familiarity of the various forensic disciplines with new rounds should allow recognition of same when encountered in a case–a potential significant benefit in cases where a weapon is recovered at the scene.

Gunshot Wounds, Suicide, Firearms

 ** Presenting Author*