Radiographic Examination of Jacketed and Non Jacked Bullet Fragment Patterns [1]

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The purpose of this study is to examine bullet fragment patterns from jacketed and non-jacketed bullets in porcine fore limbs using radiography. Ten porcine fore limbs with tissue and bone were used to produce the bullet fragment patterns. Three out of thirty-three bullets remained in the sample. Bullets that penetrated the samples were collected in a bullet trap and weighed to determine the amount of bullet fragment weight loss for each bullet. The samples were x-rayed and bullet fragment patterns were compared between the jacketed and non-jacketed bullets. The firearm calibers, types and barrel lengths used to produce the patterns included: .22 caliber revolver (15.24 cm), .25 caliber pistol (6.10 cm), .32 caliber pistol (6.35 cm), .380 caliber pistol (8.50 cm), .38 caliber revolver (20.32 cm), and 9 mm pistol (10.16 cm).

The bullet styles used included: lead round nose, lead round nose hollow point, full metal jacket and jacketed hollow point. The lead and copper plated lead bullet patterns were classified as Pattern A and Pattern B. Pattern A consisted of one large fragment with multi-fragments of lesser size clustered near the bone. Pattern B was a small multi-fragment clustered near the bone. The full metal jacketed bullets and jacketed hollow point bullets were classified as Pattern C and Pattern D, respectively. Pattern C contained no radiographic evidence of fragments in the tissue or bone and Pattern D contained some fragments of lead from the jacketed hollow point bullets clustered near the bone. Radiographic fragment patterns may provide evidence of jacketed or non-jacketed bullets.