



## Pathology Biology Section – 2011

### G29 Stippling Mimics — Differentiating Pseudostippling From Stippling: A Report of Four Cases

*Jeffery G. Gofton, MD\*, and Wendy M. Gunther, MD\*, Office of the Chief Medical Examiner, Tidewater District, 830 Southampton Avenue, Suite 100, Norfolk, VA 23510-1046*

After attending this presentation, attendees will be able to recognize factors from scene investigation, history, autopsy, and histology which may help in reliably differentiating stippling from stippling mimics, and understand the role of history and investigation as well as direct observation in differentiating stippling from stippling mimics.

This presentation will impact the forensic science community by assisting forensic pathologists in recognizing patterned injuries which may mimic stippling, and in utilizing history and scene investigation integrated with observation to draw valid conclusions about the origin of apparent stippling.

A valid outcome results from valid input. A forensic pathologist who relies only on observation, whether gross or microscopic, may draw invalid conclusions from what appear to be readily classifiable patterns of injury. Integrating history and scene findings into the decision-making process may allow the pathologist to come to reliable and valid conclusions about the source of a patterned injury that appears to be stippling.

A 20-year-old man died in a parking lot from a gunshot wound to the face, less than three weeks after sustaining nonfatal gunshot wound injury. Initial observation of the fatal gunshot wound, which entered the cranium through the tip of the nose, suggested a band or outline of stippling above the eyebrow, consistent with wearing a pair of glasses or sunglasses at the time he was shot. Multiple witnesses reported that the decedent was shot by an assailant from a car across the parking lot, far outside any possible stippling range. Scene re-investigation showed that the marks of pseudostippling matched the gravel in the parking lot. There were no glasses.

A 25-year-old male front-seat passenger in a vehicle, along with the driver was fatally shot by police during a chaotic incident that resulted from a confrontation following a police chase. The driver's body showed typical distant gunshot wounds, but the passenger, who was shot twice, had one distant gunshot wound, and one gunshot wound of the face surrounded by a dense 3" x 3" oval of apparent stippling. History and scene investigation suggested glass fragmentation injury from a bullet which passed through the passenger's window prior to striking him. A similar finding was noted in a homicide a year later when the driver of another vehicle was found dead in the front seat.

A 22-year-old woman was shot by her ex-boyfriend in a homicide- suicide event. The shooting was partially witnessed. The boyfriend shot the victim from a balcony of an outside staircase on which he stood two stories above her. He died immediately afterwards in the same location from a characteristic gunshot wound to the right temple. The decedent appeared to have stippling to the left axilla, and wounds suggestive of blunt to sharp force trauma across the neck, torso, and thigh. Extensive scene investigation was performed and coordinated with the autopsy findings to explain the apparent discrepancy between the locations of the shooter and the victim, and the victim's wounds.

These case reports are utilized, along with examples of true stippling for comparison, to demonstrate the dangers of invalid conclusions about patterned injuries when only observation is relied upon.

#### **Stippling, Pseudostippling, Glass Fragmentation Patterns**