



Pathology Biology Section – 2006

G85 DNA Done Right: Manner of Death Determination, Based on Evidence Obtained From a Belt at a Complex Scene Involving a Decomposed Body

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After attending this presentation, attendees will learn the appropriate methods for handling of evidence at complex scenes; learn about the use of DNA analysis in cases where manner of death is not evident from forensic autopsy; and learn about the value of DNA analysis in cases involving decomposed bodies.

This presentation will impact the forensic community and/or humanity by demonstrating an expanding awareness of the usefulness of DNA touch preparation analysis on items such as ligatures in scenes involving decomposed bodies, and to influence the collection and handling of relevant items at scenes where the manner of death appears undetermined.

A 32-year-old man was found dead in his home at Christmastime, in a state of moderately advanced decomposition. His car was missing from his home, as it had been towed away after an interstate crash days before. The house was secure. There was no suicide note.

The body at the scene was face down on the bedroom floor, lying prone between the bed and a chest of drawers. He was clad only in bikini underwear and socks, with some clothes draped over his lower legs. He was partially suspended by a belt ligature tied to a drawer handle. The belt was looped twice around his neck, with one end of the belt pulled through the buckle behind his left ear. The opposite end of the belt was tied in an overhand knot to the brass drawer handle.

Significant social history included homosexuality, with a history of depression over his sexual orientation, as reported by his mother. There was no known history of autoerotic asphyxia. He had no significant medical history.

Scene investigation included leaving the ligature intact for the autopsy pathologist, bagging the hands in clean paper bags, leaving the clothing undisturbed to allow for a physical evidence recovery kit at autopsy, and wrapping the body in a clean white sheet prior to placing it in a body bag.

Autopsy procedures included photography and close examination of the hands, clipping of the fingernails for DNA analysis, physical evidence recovery kit for sexual activity, removal of the ligature by division away from the buckle, and complete visceral dissection. Autopsy findings included a 1/2" horizontal ligature furrow with no upslope, and the following pertinent negative findings of no internal neck injuries, significant blunt force or penetrating injuries, obvious sexual assault, or significant natural disease processes, as far as could be determined in his state of moderate decomposition. Postmortem toxicology on bloody purge fluid yielded only an ethanol level of 0.07 mg%, which most likely was due to postmortem bacterial production.

The cause of death was evident at autopsy as ligature strangulation. The manner of death was not evident. Manners considered included either suicide, supported by the Christmas season and history of depression, accident due to autoerotic asphyxia, or homicide by another person. Autopsy findings could not distinguish between these manners of death. After discussion of this fact with the responsible detective, he elected to submit the entire ligature for touch DNA determination of the tied belt ligature end.

This case report will discuss how the DNA evidence from the end of the belt determined the manner and solved the case, with examination of relevant procedures by forensic personnel at scene and forensic pathologists at autopsy, with recommendations for future similar scene investigations.

Touch Preparation DNA, Scene Investigation, Manner of Death Determination