

IDENTIFICATION OF A NONHUMAN ASSAILANT: FORENSIC DNA ANALYSIS IN A FATAL ANIMAL ATTACK

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Animal attacks on humans are infrequently discussed in forensic science, but depending upon the nature of the attack, implications can be far-reaching. If the perpetrator is a domestic animal, criminal charges for the owner may result. If the perpetrator is a wild animal, modifications to management strategies may be necessary to mitigate future negative human-wildlife interactions. When a specific attack scenario is unknown, a multifaceted forensic approach may be necessary to help clarify the attack situation and identify the species of the attacker.

On February 15th 2019, a 77-year old teacher was viciously attacked by an animal while out for an early morning walk in Beaufort County, North Carolina. Following the attack, the victim failed to regain consciousness and three days later succumbed to her injuries. Nuclear DNA analysis of the victim's outer clothing identified two distinct canine profiles that matched to two dogs found with the victim following the attack. The two dogs were the first to alert their owners to the presence of the victim and were later deemed "not dangerous" by the county's "Dangerous Dog Committee." Canine nuclear DNA was not detected on other evidence items; however, canine mitochondrial DNA sequence detected on the victim's inner clothing, displaced parts of her body, and flashlight matched a mitochondrial haplotype common in domestic dog. Human mitochondrial DNA analysis of stool samples collected from the two dogs on the day following the attack were inconclusive. Black bear and wild canid DNA were not detected among the evidence.

This case illustrates the importance of species determination in an animal-perpetrated attack. Several types of forensic DNA analyses were performed including bear and canine nuclear DNA analysis, canine mitochondrial DNA analysis, and human mitochondrial DNA analysis of suspect feces. Utilization of a multidimensional forensic approach could help elucidate future animal attacks where the species of the perpetrator and nature of the attack is unknown.