



Odontology Section – 2005

F27 Forensic Bite Mark Analysis of Six Pit Bulls Involved in a Mauling Death

Kenneth Cohn, DDS, District Five Medical Examiner Office, 809 Pine Street, Leesburg, FL 34748; Julia Martin, MD*, District Five Medical Examiner Office, 809 Pine Street, Leesburg, FL 34748*

Attendees will gain insight into the utilization of bite mark analysis using Adobe® Photoshop® for animal (dog) bite marks.

This presentation will impact the forensic community and/or humanity by demonstrating forensic odontology bite mark analysis of human bite marks utilizing Adobe® Photoshop® has become the gold standard. However, this technique has been minimally used for animal bite marks. This case involves six dogs that produced multiple bite mark wounds in the mauling death of an elderly woman. This is a rather rare opportunity to apply accepted bite mark analysis to an animal model.

This paper will present the coordinated efforts of Medical Examiner, Dr. Julia Martin and forensic odontologist, Dr. Kenneth Cohn at District Five Medical Examiner's office, Leesburg, Florida in determining of the possible identification of six dogs involved in the vicious attack and mauling death of an 81-year-old female victim.

The victim had just returned from visiting a neighbor on Friday, December 12, 2003 when she was attacked outside her house in rural Citra, a northern Marion county community in central Florida. The dogs belonged to a next-door neighbor who found the woman lying in her front yard with the car door open. He indicated "three or four of them were around her at the time. (I) didn't take time to identify them. (I) just wanted to get them off her." The owner didn't know how long the attack had been going on but speculated it may have been 10-15 minutes prior. "They were chewing on her, all right," he said.

The Marion County Animal Control Office had been notified several times regarding the dog's aggressive behavior. The victim's daughter pleaded with Animal Control authorities just days prior to the incident to take corrective measures to prevent the likelihood of injury or death to her mother or neighbors by these dogs.

The owner left his house about 8:30 a.m. Friday with seven mixed-breed Pit Bulls inside his house with the door wired shut. He did not know how six of the dogs escaped from the house.

Officers of the Marion County Sheriff's Office investigated three issues:

1. Whether the owner had prior knowledge of the danger posed by the dogs and had they attacked previously.
2. If the owner acted in a reckless manner by not maintaining control of the animals.
3. Whether the owner knew if the dogs had a tendency to react aggressively.

The dog owner was ultimately charged with negligent homicide. Dr. Martin, Associate Medical Examiner, determined the cause of death to be exsanguination due to multiple vascular lesions, blunt and sharp injuries to the head, neck and trunk. The severity of many of the wounds rendered them unusable for analysis. However, there were sites on the extremities and torso that provided suitable bite mark evidence.

Vinyl polysiloxane dental impressions of the dentition of each suspect dog were taken at the Animal Control Center in Ocala, FL. Urethane models were fabricated from the impressions and scanned on a flat bed scanner. Full sized computer generated acetate overlays of each dentition were made using Adobe® Photoshop®. Digital photographs of the diagnostic bite marks on the victim were imported into Photoshop® and sized 1:1 for comparison. Models of the dentition, digital photographs and computer-generated overlays were all used by Dr. Cohn in the bite mark analysis.

Challenges associated with the bite mark analysis included the numerous bites, gross tissue destruction, number of dogs involved and the difficulty in distinguishing individual characteristics.

The Center for Disease Control estimates that approximately 368,245 persons were treated for dog bite related injuries in 2001. Forty-two percent of the bites incurred in children less than 14-years-old. Furthermore, from 1979 – 1998 more than 300 Americans have been killed by dog attacks. Another study from 1965 – 2001 covering 431 documented dog bite fatalities shows 12% of the victims were elderly (65 – 94-years-old) and 32% were a result of a multiple dog attack. Pit Bull and Pit Bull type dogs were involved 21%, mixed breeds 16% and Rottweilers 13%. Florida ranked 4th in dog related fatalities with 22 and California first with 47. There have been legislative efforts to control certain breeds based on aggressive behavioral tendencies.

Forensic Odontology, Bite Mark Analysis, Animal Bite Marks