



E11 Fatal Dog Attacks: A Case Report and the Application of a New Forensic Approach

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Learning Overview: This presentation will impact the forensic science community by providing scientific data from a real case report of a Dog Bite-Related Fatality (DBRF), allowing discussion about a new forensic approach that could be applied to similar cases. Notably, the presented case demonstrated that the identification of a guilty dog through a buccal swab in the dog's mouth, while the most used methods to identify an offending dog are the application of forensic odontology and DNA analysis.

Impact on the Forensic Science Community: After attending this presentation, attendees will be able to apply a new forensic approach used to identify the offending dog when dog bite-related accidents occur. In light of this case report, the forensic community should consider using this approach in real casework studies with the goal of collecting new data, validating this technique for forensic use.

Statistics show an increase in the number of dog attacks; this phenomenon represents a hazard for the public health, both for the severe injuries and, in some cases, for fatalities. The identification of the guilty dog is necessary, considering the civil or criminal consequences for the animal's owner. Forensic investigations in dog attacks involve different pathological methods, most evaluating the canine Short Tandem Repeat (STR) typing in saliva traces on wounds, even if this technique cannot always be applied. The effort to perform new methods to identify guilty dogs represents a very interesting field for the forensic community. This case report aims to describe an interesting case report of DBRF, proposing an innovative approach based on the identification of the victim's profile in the dog's mouth by using a buccal swab on the suspected aggressor dog to find the victim's genetic profile.

This case concerns an 86-year-old woman who lived in a country house with her grandson. The grandson had a pit bull dog, who lived free in the garden with the aim of protecting their property. One day, at 5:00 p.m., the woman's nephew had gone away on several errands. At 6:00 p.m., the neighbors saw the old woman watering the garden. At 7:00 p.m., the nephew came back home; passing through the garden, he saw his grandmother on the ground with the dog eating her face. The grandson hunted the pit bull with a stick and called the police and rescue, even though the woman had died. When the police arrived, the dog had escaped, but he was found in a farmhouse near the woman's home about one hour later. The prosecutor alerted the forensic team.

At the external examination, the body of the woman was found lying on the left side, with arms outstretched. The woman's face was disfigured, which led to the exposure of the facial bones. The scalp was no longer present, leaving the skull exposed. The left arm was found partially disconnected, with exposure of muscles, tendons, and the humerus. The right forearm was damaged as well. The neck and upper portion of the chest had widespread linear wounds, compatible with scratches. In addition, roundish lesions were present on both her arms and neck.

After finding the dog, the veterinarian put him to sleep, allowing the collection of a buccal swab to the forensic examiner. This swab was performed approximately 1.5 hours after the assault. Another swab was performed on the victim's wounds with the goal of identifying the guilty dog. The dog's feces were not able to be used for forensic examination as the dog had escaped after the fatal attack.

The genetic analysis carried out on the dog's swab allowed identification of the victim's profile. Moreover, the dog's STR profile obtained by the swab performed on the victim's wounds was the same as the suspected dog. Finally, the veterinarian verified compatibility with the dog's dental arch and the roundish lesions found on the body. The autopsy ascertained the cause of death: the excision of the left brachial artery, with subsequent hemorrhagic shock, compatible with a dog attack, was described. In light of the genetic analysis, the dog's owner was accused of murder. Per research, this is the first time a new forensic approach was applied to DBRFs. Moreover, it was also confirmed by traditional forensic techniques.

Dog Bite-Related Fatalities (DBRFs), Buccal Swab, Forensic Dog Investigation