



F8 Bite Mark Analysis - Part 1 and 2 Results

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Upon completion of this presentation, participants will be able to estimate the timing of bite marks based upon different variables and equipment used.

This presentation will impact the forensic community and/or humanity by underlining the effects of a person's background, training, education, skill, and experience in bite mark interpretation.

Documentation and interpretation of a bite mark is a complex subject raising many issues¹. One problem pertains to the temporal relation of the bite. Bite mark infliction can occur before or after death.

The healing response to injury applies only to living tissue.

Conversely, bite mark injury occurring after death cannot produce this response. Many other variables impact the precision of such estimates¹.

One of the purposes of this current study – Part 2 - is to evaluate whether greater precision on the timing of the injury can be estimated by analysis of the different variables involved and the different tools currently available.

Bite marks were inflicted on anesthetized piglets that were eventually euthanized. Mounted human adult dental casts were mounted on a Vice-grip and the bite marks produced at various intervals on shaved and unshaved specimens, in vivo and postmortem, with and without clothing.

The bite marks were analyzed for different factors including: color changes, distortion, indentation of the epidermis, hair, tissue crushing, variables of skin tissue thickness, abrasions, contusions, laceration, positional relationships, gravitational influence (lividity and non-lividity side), intradermal capillary hemorrhages, antemortem and postmortem cellular damage, temporal changes and content.

The bite marks were photographed, bite mark impressions taken, samples excised, transilluminated, fixed, and analyzed for histopathological changes. The results of the findings are described and discussed.

Each of the participants documented and analyzed different bite marks and were given digitized images of five potential sets of dental casts for comparison. Photoshop was used for the comparison without access to dental casts. The results of the assessment are conferred for both Part 1 and 2 of the study.

After attending this presentation, attendees will appreciate the complexities of bite mark analysis and the potential problems involved with interpretation. Recommendations are made to minimize this dilemma.

References:

- ¹ Dorion RBJ ed., Bite mark Evidence, Marcel Dekker, New York, 2005.

Bite Mark, Bite Mark Research, Bite Mark Comparison