G28 Bitemark Evidence — Part 2: Antemortem vs. Postmortem Bitemarks as Experimental Models

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After attending this presentation, attendees will better understand distortion of antemortem bitemarks vs. postmortem bitemarks. This analysis is crucial since distortion based on these two factors alone have not been compared.

This presentation will impact the forensic science community by informing attendees of the various potential problems involved in human bitemark interpretation, analysis, and comparison with suspect dentitions.

Porcine skin is considered as a representative model for the study of human bitemarks.[1-5] Error rates in human bitemark analyses have been calculated using the porcine skin model as a substitute for human skin.[6] A presentation at the 67th Annual Scientific Meeting of the American Academy of Forensic Sciences discussed the distortion potential of antemortem bitemarks.[7] This current study compares an additional 20 bitemarks inflicted by the same dentition (known biter) as antemortem bitemarks. Different parts of the porcine anatomy were bitten, including the neck, thorax, axilla, thigh, stomach, and back. The color photographs were lens and metrically corrected before comparison. Antemortem and postmortem bitemark photographs were taken at the time of bitemark infliction and on the third day postmortem. The latter scenario was chosen to mimic a potential real-life encounter of a Friday body recovery with a Monday autopsy. Attendees will have a rare opportunity to observe changes in the bitemark pattern from infliction to the third day of observation. The bitemarks were compared separately and serially. The same exercise was performed comparing the bitemarks with the dentition that created them.

Conclusions will be drawn from this exercise in order to minimize potential difficulties of interpretation, analysis, and comparison with a potential suspect dentition. The amount of distortion created in antemortem bitemarks will be compared to the amount of distortion created in postmortem bitemarks. This should clarify whether postmortem bites distort at the same rate as antemortem bites, and if postmortem bites should be used experimentally to mimic what would be expected from antemortem bites.

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