



## Odontology Section – 2006

### F29 Factors Affecting Bite Mark Analysis

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Attendees will learn about new research in the histopathology of bite marks. This presentation will demonstrate a better method in timing injury pattern (bite marks).

Documentation and interpretation of a bite mark is a complex subject raising many questions. One such issue may pertain to the temporal relation of the bite. Bite mark infliction may have occurred before, at the time of, 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 variables impact the precision of such estimates (1).

One of the purposes of the study is to evaluate whether greater precision on the timing of the injury can be estimated by analysis of the different variables involved.

Bite marks were inflicted on anesthetized piglets that were eventually euthanized. Mounted human adult dental casts were mounted on a Vicegrip and the bite marks produced at various intervals in vivo and postmortem. The advantages and disadvantages of using different casts materials are outlined.

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

The bite marks were photographed, bite mark impressions taken, the samples excised, transilluminated, fixed and analyzed for histopathological changes.

The results of the findings are described and discussed.

#### **Reference:**

- (1) Dorion RBJ ed., *Bite Mark Evidence*, Marcel Dekker, New York, 2004.

#### **Bite Marks, Research, Timing of Injury**