



Odontology Section – 2007

F10 Once Bitten, Twice Shy: Or the Case of the Colossal Contusion

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The goal of this presentation is to review information that may and may not be learned from a bite mark specifically focusing on what data the indentations can give in relation to the time of death and aging bite marks based on the bruising coloration.

This presentation will impact the forensic community and/or humanity by giving an approximate time when a bite mark has been made in relation to the time of death if there are indented marks remaining in the bite mark. However, one cannot age a bite mark based on its coloration or the changes it undergoes as it heals. Further research into the behavior of human skin after it is bitten is needed. The time required for indentations created by teeth to rebound, swell, bruise, and heal for different persons and varied locations are only part of the information needed for any temporal analysis to meet the requirements of federal and state rules of evidence.

Background Information: Forensic dentists usually think of the bite mark pattern being compared to the models of suspects. However, there is more information that can be gleaned from a bite mark. Equally as important is recognizing that there is some information that cannot be acquired or deduced.

Summary: During a course in forensic odontology, a sample bite was made on a living willing victim using a set of models mounted on a welder's clamp. The model's teeth were made from white Jet acrylic and the gingival and mucosal areas were made from Jet pink acrylic. A one minute and seven second video was taken to visually record the biting process. The video was taken with a Nikon CoolPix S1 5.1 megapixel camera that has the capability to take short video clips. Photographs were then immediately taken with the same camera to document the first tissue changes. The resultant bite mark was monitored to see how long depressions remained in the skin. At 2 minutes and 30 seconds after the bite was made, the depressions were gone, and the bite mark was swollen. The bite mark was then photographed daily, with a Nikon CoolPix 5700 5.0 megapixel camera, until it was no longer visible. Three months after the bite was made, the area was inspected using a UV light source. An Officer/Evidence Technician of the Naperville, Illinois Police department used an Omnichrome Omniprint 1000, as well as a Blak-Ray Longwave Ultraviolet Lamp, Model B-100A using 115 Volts, 60 Hz and 2.5 Amps. A variety of wavelengths were tried from 400 to 530 nanometers. Red, orange, and yellow goggles were utilized to visualize any mark that might be visible, but no demarcation of any kind was seen. A brief review of the literature concerning the aging of contusions or bruises by their color is instructive when applied to bite marks.

Conclusions: A forensic dentist **may** able to give an approximate time when a bite mark has been made in relation to the time of death **IF** there are indented marks remaining in the bite mark. However, one **cannot** age a bite mark based on its coloration or the changes it undergoes as it heals. Further research into the behavior of human skin after it is bitten is needed. The time required for indentations created by teeth to rebound, swell, bruise, and heal for different persons and varied locations are only part of the information needed for any temporal analysis to meet the requirements of federal and state rules of evidence.

Bite Marks, Forensic Odontology, Contusions