



F50 Evaluation of Multiple Bitemarks Aids Law Enforcement: A Case Report

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After attending this presentation, attendees will understand the features of a bitemark used to aid law enforcement in a case of a small child with multiple pattern bruises. The presentation will describe how bitemarks can be used to help authorities direct the course of an investigation even though a specific biter was not identified.

This presentation will impact the forensic science community by demonstrating the value of bitemarks in cases where specific identification of the biter may not be the primary purpose for requesting evaluation of multiple pattern bruises suspected of being bitemarks.

This is a report of a case involving multiple bitemarks on a three-year-old girl. The girl had spent her day in day-care under the supervision of the day-care workers. Her mother picked her up as usual after work and brought the little girl home. The actions of the child were normal and the evening family dinner was uneventful. Following dinner, the mother began to prepare her daughter for a bath prior to bed. When she removed the girl's outer garments, the mother found multiple marks on the girl's back, shoulders, and torso. When the mother asked the little girl what had happened, she said that she had been bitten in day-care but was unable to tell her parents who bit her. Her parents immediately notified police. The police responded to the call and, upon seeing the condition of the child, reported a case of possible child abuse. Police photographs were taken of the lesions on the victim and the parents were questioned. The investigation led to the day-care where the little girl had spent the day. The day-care workers denied any knowledge of what the marks were or how they ended up on the little girl in their care.

In the process of the investigation, the case was referred to the forensic odontologist for evaluation. Copies of the original photographs were sent with specific questions that the authorities wanted addressed to help them establish a direction for the investigation. First, they needed confirmation that the pattern bruises on the girl were indeed bitemarks. Second, if the pattern bruises were bitemarks, they wanted an opinion as to whether all the marks were made by one individual or if the marks were created by more than one individual. Lastly they wanted an opinion as to the age of the party or parties involved. In particular they wanted an opinion if the bitemarks were likely made by an adult or a child.

Evaluation began with a thorough observation of the photographs. They were of adequate quality with a standard 12-inch ruler present in many of the photographs. Additional evaluation of the marks included the use of Adobe® Photoshop® to remove a portion of the ruler and apply it to the image of the marks to determine intercuspid width. An overlay was made of one of the marks which was overlaid on the other marks, comparing arch size, shape, consistency of the width of the incisal edges of the anterior teeth, and the spaces between the individual teeth.

Based on the results of the evaluation, the following conclusions were made in response to the authority's questions. First, most of the marks on the child could be confirmed to be human bitemarks. Further, they all appeared to have been committed by one individual. Based on the size of the arch and the size of the teeth, the bites were committed by another child. These measurements were certainly too small for an adult and the appearance of primary teeth in the maxillary anterior segment eliminates even an adolescent as a possible perpetrator.

Based on the findings of the forensic odontologist, the authorities declined to further investigate this case or attempt to file criminal charges against the individual guilty of inflicting these bites.

Bitemark, Child, Multiple