



### F2 Bitemarks in Domestic Violence Cases: An Epidemiologic Study in Brazil

*Jeidson A. Morais Marques, PhD\*, Feira de Santana State University (UEFS), Franco Manoel da Silva Avenue, 437, Cidade Nova, Feira de Santana - Bahia, 44053-060, BRAZIL; Jamilly Oliveira Musse, PhD, Feira de Santana State University (UEFS), Franco Manuel da Silva Avenue, 437, Feira de Santana, 44053060, BRAZIL; Luis C. Cavalcante Galvão, PhD, Feira de Santana State University (UEFS), Franco Manuel da Silva Avenue, 437, Feira de Santana, 44053-060, BRAZIL; Moacyr da Silva, PhD, University of São Paulo, Rua Lineu Prestes, 5081 Cidade, São Paulo, 05508-000, BRAZIL; and Cléa A. Saliba Garbin, PhD, Faculty of Dentistry, São Paulo State University (FOA/Unesp), Rua José Bonifácio, 1193, Araçatuba, 16050-680, BRAZIL*

After attending this presentation, attendees will understand and appreciate how bitemarks can contribute to domestic violence investigation.

This presentation will impact the forensic science community by serving as a reference for those dental practitioners and other experts who may be requested to provide a testimony before the court where bitemarks are the main crime evidence.

Bitemarks may be discovered in association with crimes of violence. Such evidence, left by both perpetrator and victim, has included burglaries, domestic violence, murders, and assaults. The domestic violence includes any form of physical, sexual, or emotional abuse. Physical abuse can include slaps, kicks, scratches, and bites. In some cases, bite injuries can be the principal link between the victim and perpetrators.

The forensic dentist can assume an important role in the resolution of these crimes, especially when bitemarks are present on the victim or suspect's body. In many cases these are the main physical evidence available to investigators.

The goal of this study was to demonstrate the bitemarks prevalence in domestic violence crimes involving physical aggression in a Brazilian State.

Data was collected in the police station of the Woman's Defense in Araçatuba (São Paulo State-Brazil). Analyzing 7,550 forensic issues from the period of 2001-2005. The collection occurred over a six-month period.

Once selection was complete, domestic violence assaults totaled 1,856 cases. Among these, 42 cases that included bitemarks injury were selected.

Data was analyzed, the results reported, and organized in the following categories: bitten victim distribution by gender and age, bitemark distribution by location, and number of bitemarks. The results were processed and analyzed by statistical software. A difference with a  $p$ -value  $<0.05$  was considered statistically significant. Percentages in the study data were rounded out.

Forty-two cases were found involving bitemarks with a total of 56 bitemarks: 33 bitten subjects were victims (31 female and 11 male) and 9 were assailants (all male).

The mean age of the bitten population was 36 years (range 15-53 years). Sixty-nine percent ( $n=29$ ) of the bites occurred within the 18 to

40 year old group. The majority number of bites cases occurred in female in all age groups. There was a significant difference concerning the age between the male and female victims.

In over half the cases, the violence occurred at home. On seven incidents, the assailant was either a sister, father, mother, brother, family acquaintances, and a boyfriend, 26.1% the perpetrator were a former spouse, but in 57.1% the spouse was the assailant.

Comparing bitemark location reveals that 88.9% of the bites on the assailants were unique and was most frequently on hand/fingers, while in the violence victims 7.1% was multiple locations and 34.8% occurred in arms. Females were bitten victims in 73.8% ( $n=31$ ) of cases and the bites were on the arms, face, and hand/finger in descending order of frequency. Males were most frequently bitten on hand/fingers, arms, and legs. About 80.0% of male bitemarks victims were themselves the perpetrators of the domestic violence and around 30.1% of bite injuries were the principal link between the victim and perpetrators.

Bitemarks can be found on all anatomical regions of the body, but some sites are significantly more likely to be bitten, and the frequency that an area may be bitten will vary with the crime type. Sex and age of the victim may also impact location and bite frequency.

The results shows human bitemarks can be found at almost every anatomical location, with the arm being the anatomical site most often involved, although there is clearly a trend toward certain areas in domestic violence assaults.

A bitemark could be the only piece of physical evidence linking the suspect with the victim. In addition, among forensic practitioners, the validity of whether or not there are unique characteristics present within bitemarks remains controversial. In the courtroom both sides may disagree as to whether or not a particular injury is indeed a bite mark. **Forensic Odontology, Bitemark, Domestic Violence**