F35 A Survey of the Etiology, Anatomic Location, Victim Demographics, and Legal Disposition in 250 Bite Mark Cases Involving Human Victims

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After attending this presentation, attendees will have a better understanding of the distribution of bite marks, as it relates to age, gender and differing crimes.

This presentation will impact the forensic community and/or humanity by providing information of interest to a myriad of professional disciplines including forensic odontologists, medical examiners, detectives, profilers, emergency room personnel, coroners, psychologists, and family service counselors, as bite marks provide both physical and biological data.

A study of the etiology, anatomic location, victim demographics and legal disposition of bite mark cases was made with the purpose of updating and augmenting previous research in the field. The information may be of interest to a myriad of professional disciplines including Forensic Odontologists, Medical Examiners, Detectives, Profilers, Emergency Room Personnel, Coroners, Psychologists, and Family Service Counselors, as bite marks provide both physical and biological data. While bite marks were found on all anatomic regions of the body some sites are significantly more likely to receive bites, and the frequency that an area is bitten may vary with the type of crime. Sex and age of the victim may also impact the resulting location and frequency of bites.

A survey form for bite mark cases was created and mailed to all diplomates of the American Board of Forensic Odontology. The survey form was also included in the American Society of Forensic Odontology newsletter. The survey requested that the recipient fill out a separate form for each case for which the recipient was the primary investigator of a pattern injury. The resulting surveys were mailed and faxed, and the information entered into a Microsoft Excel spreadsheet. The responses detailed two hundred thirty two (232) bite mark cases that included seven hundred (700) individual bite marks.

Harvey (1976) published a study of 74 bite marks in coroner's cases finding the highest percentage of bites to the breasts (31%) and the extremities (13%). In 1983 Vale and Noguchi published the paper *Anatomical Distribution of Human Bite Marks in a Series of 67 Cases*, a Los Angeles County Medical examiner based study from 1970 through 1981, which included 164 bite marks. They found the areas most frequently bitten were upper extremities (22%) and then breasts (10.4%).

In 2000 Sweet and Pretty published a study entitled *Anatomical Location of Bite marks and Associated Findings in 101 Cases from the United States*. They searched the U.S. Court of Appeals database for the time period 1972-1999 and selected 101 cases, which totaled 148 bite marks. They found that breasts (31.3%) were most frequently bitten followed by the arm (18.8%).

Each of these studies looked at specific populations. Harvey, as well as Vale and Noguchi's research involved cases from corners offices, therefore all bites were on deceased subjects. Sweet and Pretty's research revolved around a search of the United States Court of Appeals database. There subjects were victims of significant crimes that the perpetrator appealed. The specificity of the populations may have influenced the outcomes of their specific research.

Methodology: The survey form was sent to approximately 1100 forensic dentist in 26 countries. The forensic experience level of the dentists varied from neophyte to very experienced.

The survey was designed to elicit information about the victim, the country in which the incident occurred, the nature of the incident (if criminal in nature, the type of crime), and the quantity and distribution of the pattern injuries. The responder was asked to give his or her opinion of the evidentiary quality of the bite mark(s) and to discuss the legal disposition of each case. The survey also asked questions about the alleged perpetrator or perpetrators. It further asked whether suspect information was collected, how many suspects were involved, and if any of the suspects were bitten and if so the location of the bite(s). The age and gender of the suspect(s), and if there was a conviction in the case, was also information that was requested on the form. Areas were also provided for the respondent to give any other information they deemed pertinent. The results were entered into a Microsoft Excel spreadsheet then analyzed and compared to previous studies in the field.

Results: Fifty-two forensic odontologists from seven countries responded. Nineteen responders were diplomates of the American Board of Forensic Odontology. The number of cases reported by each responder ranged from one to thirty three and the average number of cases reported was 4.5.

In this broad based study females were bitten more often than males. The average male victim was younger than the average female victim. Males that were victims tended to be either very young or very old. The youngest victim was a two month old boy and the oldest victim a 95-year-old woman. The data were also analyzed and sorted for various types of crimes, age, gender, and number and location of bite marks.

Perpetrators were male more often than female and there was an average of 1.4 suspects per case. The results show that most bites occurred on the arm, followed by the breast. If broken down by gender, males were bitten on the arm more than females, and females were bitten on the breast more often than males.

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This data was also filtered for differences in types of crimes, gender, age, distribution, and location of bites.

The data show patterns in location and number of bites that seem related to both the type of crime and the age of the victim.

Forensic Odontology, Bite Marks, Distribution

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