F14 The Forensic Pitfalls of Avulsive Bite Injuries: Medical and Dental Features of Importance to Odontologists

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After attending this presentation, attendees will understand a) The broad presentation of bite mark injuries and in particular their severity, b) The medical procedures that are used to treat avulsive bite marks and c) The impact that such treatments have on forensic analysis.

This presentation will impact the forensic community and/or humanity by demonstrating how avulsive bite mark injuries continue to be analyzed by forensic dentists and yet many have undergone medical treatment prior to evidence collection. This presentation will demonstrate that such injuries are often unsuitable for physical comparison.

Introduction: Bite mark injuries continue to represent important physical and biological evidence in some of the most serious of crimes including rape, homicide, physical abuse, and assault. Odontological societies worldwide have developed protocols for the collection of evidence from both the victim and suspect and a range of analysis methods exist; many of which are based upon the physical comparison of the suspect's dentition to the bite mark wound using transparent overlays.

Bite marks can be categorized in a number of different ways; based on their severity, forensic significance or even anatomical location. A recent index has been developed that assess the severity of the injury and relates this to this likelihood of sufficient forensic evidence being available for a physical comparison.

Cases: A recent audit of bite mark cases from the North West of England demonstrated that over 39% of bite marks fall into the 'avulsive' category; i.e., those injuries in which material has been removed. Such injuries are commonly seen on the ear, nose, and occasionally distal aspects of the digits. There have been a number of cases where such injuries have been analyzed and an odontological opinion rendered that an individual suspect could be positively identified.

In all such cases medical treatment had been undertaken prior to the collection of the evidence. Medical treatment of bite injuries will typically involve thorough wound cleansing, debridement, and suturing. Each of these treatments has the possibility to alter the physical dimensions and appearance of the bite injury thus rendering it unsuitable for analysis.

A range of cases will be shown, each demonstrating the inherent difficulties in assessing such injuries and the pitfalls that can occur when it is attempted. Details of the medical procedures involved in treating such injuries is essential knowledge for all forensic dentists and these will be described in full with the implications for physical comparisons clearly explained.

Conclusion: It is the authors' view that avulsive bite mark injuries are unsuitable for analysis after medical treatment and the use of such injuries for physical comparison prior to treatment is problematic. It is proposed that guidelines for bite mark analyses be extended to include a recommendation that certain injury severities; i.e., those at the extremes of the severity scale (minor bruising and avulsion) be deemed inappropriate for bite mark assessment.

Bite Mark, Avulsive, Treatment

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