



F34 Dental Reconstruction of Mutilated Remains to Facilitate Analysis in a Case of Defensive Bite Mark Injury With Two Possible Biters

Barry Blekinsop, BA, LLB, Sylvie-Louise Avon, DDS, MSc, and Robert E. Wood, DDS, MSc, PhD*, Office of the Chief Coroner for Ontario, c/o Princess Margaret Hospital, Dental Department, 610 University Avenue, Toronto, Ontario, Canada

The author will present a case study in which a deceased person bit their murderer. Attendees will be shown a novel technique for preparing damaged postmortem remains so that they can be used for bite mark comparisons. Additionally the bite mark could have been made by either the deceased or another person named by the accused as the biter indicating that in certain circumstances bite marks may not be unique. Finally Quicktime® movies were used to demonstrate the technique to the Crown attorney and the defense lawyers.

Bite mark evidence has been accepted in courts of law; however, most bite marks are made by an assailant on the body of the victim. The present case illustrates a case where a bite marking was made on the arm of a murderer by the deceased in an act of self-defense. Following the murder the victim's body was disassembled and attempts were made to burn it. Following autopsy the body was prepared by forensic anthropology staff for examination of the bones for cut mark injuries. During the de-fleshing of the body many of the teeth were separated from their sockets. This was done in the absence of knowledge of a suspected bite mark. After the body had been de-fleshed the authors were advised that the deceased might have bit one of two suspects accused of killing him.

The authors retrieved the teeth and then replaced them within their dental sockets. The teeth were air dried, and cemented *in situ* with cyanoacrylate cement. To verify the proper placement and position a complete set of periapical radiographs was exposed and the relative sizes of the periodontal ligaments around the entire root apex was assessed for uniformity. The reconstructed dentition was then used for bite mark comparison. The bite mark expert in the present case requested that the police force involved not provide him with copies of the bite mark photographs until such a time as the reconstruction of the dentition of the deceased had been completed.

Following completion of the reconstruction of the deceased biter's dentition, photographs of a bite mark on the arm of the accused were provided to the examiner who compared them with the bite. As a consequence of this examination the examiner concluded that the bite mark on the arm of the accused could have been produced by the dentition of the deceased. In the interim, the accused named a former girlfriend as the maker of the bite mark injury. Whilst this lady denied having produced this bite mark, an evaluation of her dentition to the wound on the accused was undertaken. The bite mark expert concluded that the bite mark could also have been made by the girl friend as the accused had stated. The expert consulted a second expert in bite marks who reached similar conclusions.

In order to facilitate the explanation of these findings to the Crown attorney and defense experts Quicktime macro movies were made from Photoshop overlay images where the dentition of each possible biter was floated over the image of the bite mark at different opacities resulting in a fade-in fade-out of the bite marks.

The authors conclude that in cases where there are a limited number of teeth making the bite mark it is possible to have more than one biter matching the bite mark and that the concept of uniqueness of each bite mark is questionable. The authors further conclude that dental reconstruction may facilitate the comparison of the dentition of the deceased to bite marks left of the body of the accused.

Bite Marks, Dental Reconstruction, Uniqueness