

# Bite mark analysis is not the same as bite mark comparison or matching or identification: Bite mark evidence

Myriam amoyal,

South Africa

## Editorial

There is currently a serious problem with misuse and misunderstanding of bite mark evidence within the larger field of forensic odontology. Saks et al heralds an impending 'national dismantling of forensic odontology'. What the paper actually addresses is the very real problem of bite mark comparison, or matching, for purposes of suspect identification. Bite mark comparison, or matching or identification, is by no means the whole discipline of forensic odontology. There is valuable information that can and should be obtained from a bite mark, whether or not it can be, or is, used for comparison purposes. Forensic odontology includes identification of human remains and age estimation as well as bite mark evidence. Many professionals, including forensic odontologists, confuse themselves and other professionals by mistakenly equating bite mark analysis with bite mark comparison, or matching, for purposes of suspect identification. This misuse of the terms is a serious problem. The definition of analysis is: 'a careful study of something to learn about its parts, what they do, and how they are related to each other'. Bite mark analysis is conducted as part of a medico-legal autopsy. This involves objective documentation and interpretation of the evidence surrounding patterned injuries that may, or may not, be bite marks. During bite mark analysis, nothing but the patterned injury and the circumstances surrounding it is taken into consideration. Analysis has nothing to do with comparing or matching anything to a suspect or identification of a suspect from a limited population group. Analysis frequently yields valuable information that forensic odontologists testify to in courts of law, just as forensic pathologists do with respect to their objective findings and their interpretations of those findings based on experience, training and the circumstances of the event. Bite mark analysis rarely leads to high-profile convictions of suspects, as has sometimes happened when matching or comparing bite marks on a victim to a suspects' teeth. But it can and does produce information that, when provided to the criminal justice system, can dramatically influence outcomes—for investigators, for prosecutors, and for the defense. In bite mark cases, analysis is the bulk, and most important part, of a forensic odontologist's work. It should be done before any suspects are introduced for the purpose of making a comparison in order to avoid bias. The analysis process involves answering basic, crucial, questions such as whether or not the pattern injury is a human bite mark. This question can be the most difficult part of

the entire process. After establishing whether a patterned injury is, indeed, a bite mark, other questions must be asked. Is it a human bite mark? Was it made by an adult or a child? Was it swabbed for DNA? Was it made through clothing? If so, was the clothing swabbed for DNA? Where is it located on the victim and in what position was the victim when it happened? Could it have been self-inflicted? What was the position of the biter? Was it offensive or defensive? Was it affectionate or does it demonstrate violence? Will it produce a permanent injury? If so, simple battery may become aggravated battery. When was the bite inflicted in relation to the time of death? Is it fresh, a scar or somewhere in between? Was the person bitten alive or dead at the time? Are there any unique dental characteristics that could be used to exclude possible suspects? In cases of multiple bites, did the same biter make them all? Were they all made at the same time or do they establish a pattern of long-term abuse? These questions, and more, are the essential core of the analysis of every bite mark, and produce a large amount of information that can be of considerable value to an investigation before any suspects are identified or charged. This information, when combined with other non-dental evidence such as position of the biter vis-à-vis the victim, self-inflicted or not, relation to the time of death or discovery, can aid the prosecution or the defense. In some cases, such as determining battery versus aggravated battery, adult versus child bites, identification of the upper and lower arches, possibility of self-infliction, etc., comparison to a suspect is not even relevant. The definition of comparison is: 'the act or process of comparing; an examination of two or more items to establish similarities and dissimilarities'.<sup>5</sup> Bite mark comparison is the comparison of a human bite mark to a suspect's dentition using various methods such as dental models and overlays for purposes of determining whether a suspect can be eliminated from a pool of possible perpetrators. This is not part of a medico-legal autopsy, but rather a separate process done for use by members of the legal system as part of the prosecution of a suspect. There is no doubt that, as Saks et al. clearly describe, bite mark comparison for identification has been seriously misused.