



F40 Forensic Dental Aspects of Bitemarks in Food Caused by Dental Prostheses

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After attending this presentation, attendees will understand and appreciate how bitemarks caused by dental prostheses can be successfully used for crime investigation.

This presentation will impact the forensic science community by serving as a reference for dental practitioners and other experts who may be requested to provide testimony before the court that bitemarks can be the main crime evidence, especially when caused by a dental prostheses user.

Bitemark analysis constitutes the most common form of dental evidence presented in criminal court. Bitemarks tend to have a double horseshoe pattern showing the six anterior teeth of the upper jaw and the corresponding six teeth in the lower jaw. Those made in food are usually well defined; bitemarks made in flesh are usually less well defined. Bitemarks can be left by human teeth, animal teeth, or objects that mimic teeth, like dental prostheses, which can produce a bite impression.

Bitemarks may be found at the scene of a crime and their analysis has been used for many years as an aid in forensic investigation. Investigation of bitemarks in foods may be an important part of a criminal investigation to include or exclude suspect.

Cases have included bites on apples, cheese, and chocolate bars, and have been associated with successful convictions. Given this information, along with other relevant evidence, the judge or jury is likely to find that the perpetrator of the bite also committed the rape, murder, or other criminal act.

The goal of this study is to evaluate the identification viability of bitten foods by dental prostheses.

The sample was composed for 10 (ten) dental prostheses pairs, produced in a laboratory and mounted in a joint occlusion device. A sample was set randomly created and bites produced in foodstuffs (four chocolates, four cheeses and two bananas), without the knowledge of the researcher.

From suspects study casts of the upper and lower jaw were taken. The registration of the casts performed with an articulator. A metric analysis technique was employed involving the measurement of the diameter of each tooth in the food models and prostheses, using one digital measuring device.

Bitemarks in foodstuffs were investigated making a positive model of the impressions using plaster. Study casts of suspects were used for pattern-associated comparison of the bitemarks.

It was possible to positively identify the biter in seven of the assessed cases. However, in cheese samples 1 and 2, and chocolate 3 it wasn't possible to identify the biter, but to exclude 8, 5, and 8 suspects respectively. The results suggest that the bitemarks in food stuffs, produced by prostheses, may be possible.

Forensic Odontology, Bitemark, Dental Prosthesis