

Digital 3D analysis - bitemark and database

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Diogo Caetano¹
Diogo Fonseca¹
Carolina Lino¹
Rita Custódio¹
Jinita Udani¹
Ana Corte Real²

*¹Graduate Student of Medicine
Faculty of University of Coimbra*

*²PhD of Medicine Faculty of
University of Coimbra*

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Corresponding author:
a.corte.real4@gmail.com

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ABSTRACT

The analysis of bitemarks has been done through analogical methods. Bitemarks can now be turned into more consistent evidence by using a digital tridimensional (3D) analysis.

This study intended to present a pattern of comparison between a foodstuff bitemarks (apple) and suspects' individual dental arches, by the analysis of tomographic images.

For this purpose, the researchers studied the match process of three-dimensional reconstruction monitoring by slice morphological analysis (sagittal, axial and horizontal). The matching process was made by bitemark and dental arches reference points. Those interdental contact points were: central incisor/central incisor, central incisor/lateral incisor and lateral incisor/canine. In the matching process we also took into account the shape of the arch, absences or malposition of teeth in the anterior sector that could help in concluding if the bitemark belonged or not to the suspect analysis.

The results were classified in: presumable or not presumable author of the bitemark. With this methodological pattern, the bitemark analysis was quick, easy and precise comparing with conventional analogic methods.

This study will allow to accurately match the foodstuff bitemark evidence and suspects' individual dental arches by tomographic images. In the future this analysis will be done by database software.